December 8, 1997

MEMORANDUM

TO: Orville D. Green, Assistant Administrator
Air and Hazardous Waste

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau

SUBJECT: Issuance of Modification of Tier II Operating Permit #005-00004 to
Ash Grove Cement Company; Inkom

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Tier II Operating Permits.

PROJECT DESCRIPTION

This project involves the "modification" of Tier II Operating Permit (OP) #005-00004. Ash Grove Cement (AGC) has not requested a change in the method of operation, or a change in short-term and annual emission rates. AGC's proposed modifications involve increases in material throughput for given process areas. For a listing of the modifications proposed by AGC, please refer to Appendix A. Operating requirements in Tier II OP #005-00004 limiting material throughput have been modified to reflect these changes. Minor changes to the Tier II OP have also been made in order to clarify the intent of certain requirements therein.

No public comment period has been scheduled for this permit because DEQ has not modified the intent of any of the requirements or any of the emission limits therein. AGC's proposed "modification" does not qualify as a modification as defined by IDAPA 16.01.01.006.57, has not been submitted pursuant IDAPA 16.01.01.401.01, or required fluid modeling to determine a GEP stack height. DEQ has, therefore, not provided for a public comment period in accordance with IDAPA 16.01.01.404.01.c.

SUMMARY OF EVENTS

DEQ received AGC's application to modify its Tier II OP #005-0004 on August 21, 1997. DEQ deemed the application incomplete on September 10, 1997. DEQ received AGC's response to the incompleteness letter on October 6, 1997. On November 5, 1997, DEQ met with AGC officials, and discussed the need that AGC substantiate its claim of no significant emissions increase. DEQ requested that AGC submit the information to substantiate its claim before proceeding with processing the request. DEQ received the requested information on November 12, 1997, and November 17, 1997. On November 19, 1997, DEQ spoke with AGC officials regarding the lack of information regarding blasting emission. AGC and DEQ concurred that current AP-42 EFs did not accurately represent blasting emissions. AGC and DEQ agreed that DEQ would use data contained in a May 10, 1995, letter submitted by AGC to estimate those emissions. DEQ deemed the application complete on November 21, 1997.

RECOMMENDATIONS

Based on the review of the submitted information and modified emission inventory, the Bureau recommends that Ash Grove Cement Company, located in Inkom, Idaho, be issued a modified Tier II OP. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees, pursuant to IDAPA 16.01.01.470, for the Tier II OP.

SJR\ABC:jrj...\permit\ashgrove\agcmod2.IMM

Attachments

cc: Pocatello Regional Office
R. Elkins, Pocatello Regional Office
A. Cole, Pocatello Regional Office
Source File
COF

December 8, 1997

MEMORANDUM

TO: Susan J. Richards, Bureau Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

FROM: Almer B. Casile, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Technical Analysis for Modification of Tier II Operating Permit #005-00004
Ash Grove Cement Company, Inkom

PURPOSE

The purpose of this memorandum is to satisfy the requirements of IDAPA 16.01.01 Sections 400 through 406 (Rules for the Control of Air Pollution in Idaho) for issuing Operating Permits.

PROJECT DESCRIPTION

This project involves the "modification" of Tier II Operating Permit (OP) #005-00004. Ash Grove Cement (AGC) has not requested a change in the method of operation or a change in short-term and annual emission rates. AGC's proposed modifications involve increases in material throughput for given process areas. For a listing of the modifications proposed by AGC, please refer to Appendix A. Operating requirements in Tier II OP #005-00004 limiting material throughput have been modified to reflect these changes. Minor changes to the Tier II OP have also been made in order to clarify the intent of certain requirements therein.

No public comment period has been scheduled for this permit because DEQ has not modified the intent of any of the requirements, or any of the emission limits therein. AGC's proposed "modification" does not qualify as a modification as defined by IDAPA 16.01.01.006.57, has not been submitted pursuant IDAPA 16.01.01.401.01, or required fluid modeling to determine a GEP stack height. DEQ has, therefore, not provided for a public comment period in accordance with IDAPA 16.01.01.404.01.c.

FACILITY DESCRIPTION

The AGC plant is situated along the bank of the Portneuf River, approximately eleven (11) miles southeast of Pocatello, Idaho. The plant produces clinker from raw materials and processes the clinker into cement.

For a listing of all transfer points, point sources, roads, storage piles, and their associated emissions, please refer to Appendix A.

SUMMARY OF EVENTS

DEQ received AGC's application to modify its Tier II OP #005-00004 on August 21, 1997. DEQ deemed the application incomplete on September 10, 1997. DEQ received AGC's response to the incompleteness letter on October 6, 1997. On November 5, 1997, DEQ met with AGC officials, and discussed the need that AGC substantiate its claim of no significant emissions increase. DEQ requested that AGC submit the information to substantiate its claim before proceeding with processing the request. DEQ received the requested information on November 12, 1997, and November 17, 1997. On November 19, 1997, DEQ spoke with AGC officials regarding the lack of information pertaining to blasting emission. AGC and DEQ concurred that current AP-42 EFs did not accurately represent blasting emissions. AGC and DEQ agreed that DEQ would use data contained in a May 10, 1995, letter submitted by AGC to estimate those emissions. DEQ deemed the application complete on November 21, 1997.

DISCUSSION

1. **Emission Calculations**

Staff reviewed the proposed emission inventory submitted by AGC on October 6, 1997, and determined that AGC had not changed the emission estimation equations used to issue AGC's December 4, 1995, Tier II OP #005-00004. AGC did, however, change the value of certain variables within the equations to allow for an increase material throughput without an increase in emissions. (This project involves changes in throughput and emission control efficiencies. Most all of which have either remained the same or increased. A letter discussing changes in emission factors and control efficiencies has been included in Appendix B.) Staff further modified the submitted emission inventory to reflect no change in short-term material throughput rates and emission limits. AGC had based short-term emission estimates on short-term material throughput rates that differed from those given in the Tier II OP.

All short-term and annual emission estimates are based on the following equations:

lb/hr = *ton/hr throughput * lb/ton emission factor * (1-Moisture Removal Efficiency) * (1-Capture Efficiency) * (1-Building Enclosure Efficiency)* (1)

ton/yr = *ton/yr throughput * lb/ton emission factor * (1-Moisture Removal Efficiency) * (1-Capture Efficiency) * (1-Building Enclosure Efficiency) * 1 ton / 2000 lb.* (2)

AGC has changed the layout of the spreadsheets used to estimate emissions (please see Appendix A). AGC has done this to clarify which source codes were used to establish the emission limits for the given process area.

Emission estimates for drilling and dozing were performed using an annual throughput of 435,708 tons per year of raw material. Previous estimates were based on 400,000 tons per year of raw material. Short-term emission estimates for blasting were based on a May 10, 1995, letter submitted by AGC (see Appendix C). The August 15, 1997, version of the EI did not include an estimate short-term and annual blasting emissions. AGC stated in a conversion held on November 19, 1997, that the EI did not contain because Section 11.19.2 of the 5th Ed. of AP-42 stated that EF estimates for blasting were sparse and unreliable (see Appendix C). DEQ concurred, but stated that AGC must include an estimate for this previously permitted activity. (Original estimates for the Tier II OP proposed in May 1995 were based on questionable lb/ton EFs submitted as part of AGC's then proposed EI.) Though the May 10, 1995, data was received, it was not included in that EI as part of the overall annual estimate of emission. DEQ at this time, however, is referring back to the May 10, 1995, data for lack of any other information submitted in the application. DEQ's basis for using the May 10, 1995, data is that AGC had stated in the November 19, 1997, conversation that overall blast sizes had decreased, which DEQ assumed would reduce overall emissions. Short-term emission estimates were assumed to be the value of the EF, except in units of lb/hr. Annual emissions estimates assume that the total number of blasts per year, six (6), will yield 435,708 tons of raw material. Compliance demonstration procedures have not changed. The Permittee will still record the number of tons of material blasted. Annual emission estimates were determined by multiplying the lb/blast by the number of blasts per year and dividing the product by 2,000 lbs/ton.

Short-term and annual operating limits for Limestone Receiving, Crushing , and Storage were determined using the throughput rates of source code F24. This emission point represents transfer to stockpile only. Raw material throughput of this process area is as high as 544,635 tons/yr (see Appendix A, source code F7 and F14). Demonstration of compliance with the monthly based hourly operating limit shall be determined by dividing the total monthly throughput by actual hours of operation. Compliance with similar short-term operating limits in Iron Ore-, Silica-, and Gypsum Receiving, Crushing, and Storage should be determined in a similar manner. It should be noted the DEQ has changed the short-term material throughput rates of the Limestone-, Iron Ore-, Silica-, and Gypsum Receiving, Crushing, and Storage process areas. Staff have changed the values to reflect the short-term operating limitation found in December 4, 1995, Tier II OP, and maintain a level of operational flexibility for AGC. Staff have also changed, at the request of the AGC, the annual throughput values used to calculation annual emissions values. Staff have changed the wording of the Limestone-, Iron Ore-, Silica-, and Gypsum Receiving, Crushing, and Storage sections of the permit to clarify that AGC must comply with the short-term and annual process rate limits. Previously, these sections contained an "or" statement that staff interpreted to be vague and possibly misleading. Staff have made these corrections elsewhere in the permit also.

Operating requirements for Silo Withdrawal, Conveying, and Storage were taken from the short-term and annual throughput rates of source code F30. The emission point associated with source code number is the point at which all materials pass through, and thus has the highest short-term and annual material throughput rate. Demonstration of compliance with the monthly based hourly operating limit shall be determined by dividing the total monthly throughput by actual hours of operation. All source codes used to determine the short-term and annual emission limits are listed in Appendix. A.

The average hourly throughput of #1 and #2 Kilns, based on annual production and actual hours of operation, has been increased from 12.5 tons and 16.7 tons, respectively, to 15.4 tons and 18.4. As can be seen in Appendix A, these new values are based on 8,760 hours of operation, and 135,000 tons and 170,000 tons throughput for the #1 and #2 Kilns, respectively. Demonstration of compliance with the hourly operating limit shall be determined by dividing the total annual throughput by actual annual hours of operation. AGC has also submitted emission data demonstrating that past gaseous emission levels from the kilns do not have the potential to violate permit gaseous emission limits. A review of the submitted data revealed AGC's claim to be true for all pollutants except CO. CO emissions were submitted at ninety-two percent (92%) of the emission limit. Data submitted supporting the August 1993 test used to determine the ninety-two percent (92%) CO emission rate revealed that the data was not determined according to 40 CFR 60, Appendix A, Reference Method 10. Further review revealed that the procedures used had an accuracy of ±10%. This accuracy coupled with the measured value and the proposed increase in throughput could have the potential of exceeding the emission limit. AGC has asserted, however, "that there will be no significant change in emission of gaseous pollutants." While this claim may be true, DEQ has asserted that the CO limit for the #2 Kiln was determined using an initial CO compliance test performed at a given material throughput, and that a possible increase in emissions may occur with an increase in throughput.

Though DEQ cannot confirm AGC's claim, resolution of this matter could only be achieved if AGC were required to develop an EF for the proposed increase. DEQ understands, however, that due to time schedule involved that this is not possible. DEQ has, therefore, granted AGC's request to be permitted at its current CO limit at an increase throughput rate. DEQ would like to clarify that though it has granted AGC's request, it has not relinquished its ability to resolve this discrepancy during the issuance of AGC's Tier I OP.

It should be noted that the #1 & #2 Clinker Coolers and Clinker Handling Systems process area is limited by the same operating requirements as the #1 and #2 Kilns. The process area not only handles clinker from the #1 and #2 clinker coolers, but also clinker received by rail car. The operating requirement listed in the permit for this process area only limits the process rate of the clinker coolers, and does not specifically limit the amount of material received by rail car. The emission estimates for this process area, however, were determined using an hourly and annual throughput rate of 500 tons and 55,000 tons, respectively. This estimate, along with other operating requirements in the permit, limits the amount of material received by rail. (Specifically, the difference of the annual material throughput limitations of the kilns, finish grinding, and gypsum receiving and crushing yield 55,000 tons clinker.) Cement Kiln Dust Handling operating requirements were determined using source codes F88, F109, F98, and F107. These represent uncontrolled emissions and are, therefore, the greatest contributors to the overall emission of the process area.

Emission estimates for Clinker Reclaim were determined using source codes F65A - F81. Operating requirements for this process area are based on those established for Finish Grinding and Associated Handling. Compliance with the operating requirements of Finish Grinding and Associated Handling shall establish the compliance status of Clinker Reclaim. It should be noted that AGC and DEQ staff discovered an error in the summation of emission estimates used to establish the emission limit for this process area in the December 4, 1995, Tier II OP. The estimates used to establish the emission limit in the previous permit did not sum emissions from all emission points within the process area, yielding a lower total emission. This error was corrected, and the updated emission estimates were then used to establish the appropriate emission limit. It should also be noted that a comparison of "corrected" before and after total emission estimates for Clinker Reclaim shows an overall decrease in emissions. No change in the method of estimating emission was associated with the correction.

For the process area Finish Grinding and Associated Handling, throughput limits for the #1, #2, and #3 Mills were taken from emission points F120, F121, and F136, respectively. These points represent the total cement throughput of each of the mills. The cement throughput limit of each mill was set at seventy-seven (77) tons per hour (determined as an average value over a time period of one month), and 382,737 tons per year. (While these values appear to be a significant increase of the previously permitted values, a review of an October 5, 1995, EI has shown that the former values only represented processing of cement from raw material only. The mills take in raw materials <u>and</u> cement. The December 4, 1995, Tier II OP only listed cement throughput from raw materials. The permit has been updated to reflect this finding, and now contains the "adjusted" throughput value. It should be noted that this process does have a recycle loop that make it appear to handle more material than it actually does.) Demonstration of compliance with the monthly based hourly operating limit shall be determined by dividing the total monthly throughput by actual hours of operation.

The sum of the throughput of source codes F201 - F203 were used to determine the total annual ship out limit for Cement Loadout. No other operating requirements were changed for this process area. No changes were made to the operating requirements of the Coal Handling process area. Total mileage and water control efficiency values have been changed in the Paved Road emissions calculation. These same changes plus changes to vehicle speed values have also been made to the Unpaved Road emissions. Material throughput values have also been changed in the Storage Pile and Internal Transfers emission calculations. Changes made to the Internal Transfers emissions calculations also involve Trip Mileage, Unpaved Water Control, and Material Trips per year.

2. <u>Modeling</u>

This project did not require modeling. Data submitted as part of the application for this project did not show an increase in emissions, and therefore modeling was not performed.

3. <u>Area Classification</u>

AGC is located in Inkom, which is located in the Power-Bannock Counties Nonattainmemt Area. This area is nonattainment for PM_{10} and attainment or unclassified for other criteria pollutants. AGC is also located in Zone 12, and AQCR 61.

4. <u>Facility Classification</u>

The facility is a Portland cement plant (SIC #3241) and is a designated facility, as defined in IDAPA 16.01.01.006.25. The facility is a major facility, as defined in IDAPA 16.01.01.00654, because actual emissions of PM, NO_x, SO_2, and CO exceed, or are equal to 100 tons per year (T/yr). The facility is also subject to NSPS, 40 CFR 60 Subpart F.

5. <u>Regulatory Review</u>

This Tier II OP is subject to the following permitting regulations:

A. <u>State</u>

<u>IDAPA 16.01.01.006</u>	Definitions;
<u>IDAPA 16.01.01.401</u>	Tier II Operating Permit;
<u>IDAPA 16.01.01.402</u>	Application Procedures;
<u>IDAPA 16.01.01.403</u>	Permit Requirements;
<u>IDAPA 16.01.01.404</u>	Procedure for Issuing Permits;
<u>IDAPA 16.01.01.405</u>	Conditions for Tier II Operating Permit;
<u>IDAPA 16.01.01.406</u>	Obligation to Comply;
<u>IDAPA 16.01.01.470</u>	Permit Application Fees for Tier II Permits;
<u>IDAPA 16.01.01.525</u>	Registration and Registration Fees;
<u>IDAPA 16.01.01.625</u>	Visible Emissions Limitations;
<u>IDAPA 16.01.01.650</u>	General Rules for the Control of Fugitive Dust;

B. <u>Federal</u>

40 CFR 60 Subpart F	Standards of Performance for Portland Cement Plants

<u>RECOMMENDATION</u>

Based on the review of the submitted information and modified emission inventory, the Bureau recommends that Ash Grove Cement Company, located in Inkom, Idaho, be issued a modified Tier II OP. Staff members also recommend that the facility be notified in writing of the obligation to pay permit application fees, pursuant to IDAPA 16.01.01.470, for the Tier II OP.

SJR\ABC:jrj...\permit\ashgrove\agcmod2.TAM

Attachments

cc: Pocatello Regional Office
R. Elkins, Pocatello Regional Office
A. Cole, Pocatello Regional Office
Source File COF

APPENDIX A

ASH GROVE CEMENT COMPANY, INKOM PLANT; SUMMARY OF PROPOSED POTENTIAL EMISSIONS AND THROUGHPUT RATES

	Proposed				Limits in Tier II Permit of 12/04/95				Proposed values <= Tier II Limits?				
	PM		PM_{10}		PM		PM_{10}		PM		PM_{10}		
	LBS/HR	T/YR	LBS/HR	T/YR	LBS/HR	T/YR	LBS/HR	T/YR	LBS/HR	T/YR	LBS/HR	T/YR	
POINT SOURCES:													
Kiln #1	11.61	50.84	9.87	43.21	11.61	50.83	9.86	43.21	Yes	No	No	Yes	a
Kiln #2	12.99	56.90	4.07	17.82	16.87	73.91	14.34	62.82	Yes	Yes	Yes	Yes	
Baghouse #1	0.63	2.78	0.54	2.36	0.65	2.78	0.54	2.32	Yes	Yes	Yes	No	a
Baghouse #2	0.92	4.03	0.78	3.43	0.94	4.03	0.70	3.36	Yes	No	No	No	a, b
Baghouse #3	0.73	1.59	0.62	1.35	0.91	3.19	0.62	2.16	Yes	Yes	Yes	Yes	
Baghouse #4	0.15	0.34	0.13	0.29	0.19	0.67	0.13	0.46	Yes	Yes	No	Yes	a
Baghouse #5	1.59	5.21	1.35	4.43	2.11	6.95	1.35	4.45	Yes	Yes	Yes	Yes	
Baghouse #6	2.09	6.86	1.78	5.83	2.77	9.15	1.78	5.86	Yes	Yes	Yes	Yes	
Baghouse #7	0.31	0.67	0.26	0.57	0.39	1.35	0.26	0.91	Yes	Yes	No	Yes	a
Baghouse #8	2.82	9.26	2.40	7.87	3.53	12.34	2.39	8.38	Yes	Yes	No	Yes	a
Subtotal:	33.84	138.47	21.79	87.16	39.97	165.20	31.97	133.93	Yes	Yes	Yes	Yes	a, b
PROCESS FUGITIVES:													
Drilling, Blasting and Dozing	2.65	0.07	0.13	0.02	5.39	29.34	1.78	3.09	Yes	Yes	Yes	Yes	
Limestone Receiving, Crushing and Storage	1.91	1.49	0.92	0.72	23.59	17.75	10.51	7.82	Yes	Yes	Yes	Yes	
Iron Ore Receiving, Crushing and Storage	1.69	0.02	0.81	0.01	16.38	0.16	7.14	0.07	Yes	Yes	Yes	Yes	
Silica Receiving, Crushing and Storage	1.73	0.39	0.83	0.19	9.08	1.99	4.04	0.89	Yes	Yes	Yes	Yes	
Gypsum Receiving, Crushing and Storage	2.15	0.12	1.03	0.06	22.86	1.18	10.21	0.54	Yes	Yes	Yes	Yes	
Silo Withdrawal, Conveying & Storage	0.05	0.21	0.02	0.10	0.42	1.48	0.19	0.68	Yes	Yes	Yes	Yes	
Coal Handling	2.52	0.35	1.21	0.17	5.61	0.74	1.40	0.18	Yes	Yes	Yes	Yes	
#1 & #2 Clinker Coolers and Clinker Handling	47.20	78.65	14.45	37.65	49.06	88.20	24.40	43.54	Yes	Yes	Yes	Yes	
Clinker Reclaim	10.49	45.96	5.25	22.98	6.43	28.15	3.21	14.07	No	No	No	No	c
Cement Kiln Dust Handling	1.82	1.55	0.91	0.77	1.81	1.59	0.90	0.80	No	Yes	No	Yes	a
Finish Grinding and Associated Handling	3.11	3.79	1.51	1.77	3.19	5.24	1.53	2.41	Yes	Yes	Yes	Yes	
Cement Loadout	13.55	3.50	6.78	1.75	15.83	4.01	7.91	2.00	Yes	Yes	Yes	Yes	
Subtotal:	86.22	136.04	33.71	66.17	159.65	179.83	73.22	76.09	Yes	Yes	Yes	Yes	
PAVED ROADS	-	4.0		0.9	46.52	16.12	10.01	3.47	Yes	Yes	Yes	Yes	
UNPAVED ROADS	-	9.0	-	3.3	19.97	16.58	7.19	5.97	Yes	Yes	Yes	Yes	
PILES		4.2		2.0	5.39	33.25	1.78	3.29	Yes	Yes	Yes	Yes	
SUB TOTAL FOR PROCESS FUGITIVES	86.2	157.3	33.7	72.4	231.5	245.8	92.2	88.8	Yes	Yes	Yes	Yes	
GRAND TOTAL	*120.1*	*295.8*	*55.5*	*159.5*	*271.5*	*411.0*	*124.2*	*222.8*	*Yes*	*Yes*	*Yes*	*Yes*	

a) rounding error, would be "Yes" if only one decimal used
b) "No" due to change of ambiguous method of calculating lbs/hr PM10 in 100995.xls
c) would be "Yes" if 100995.xls value had been entered into Tier II permit

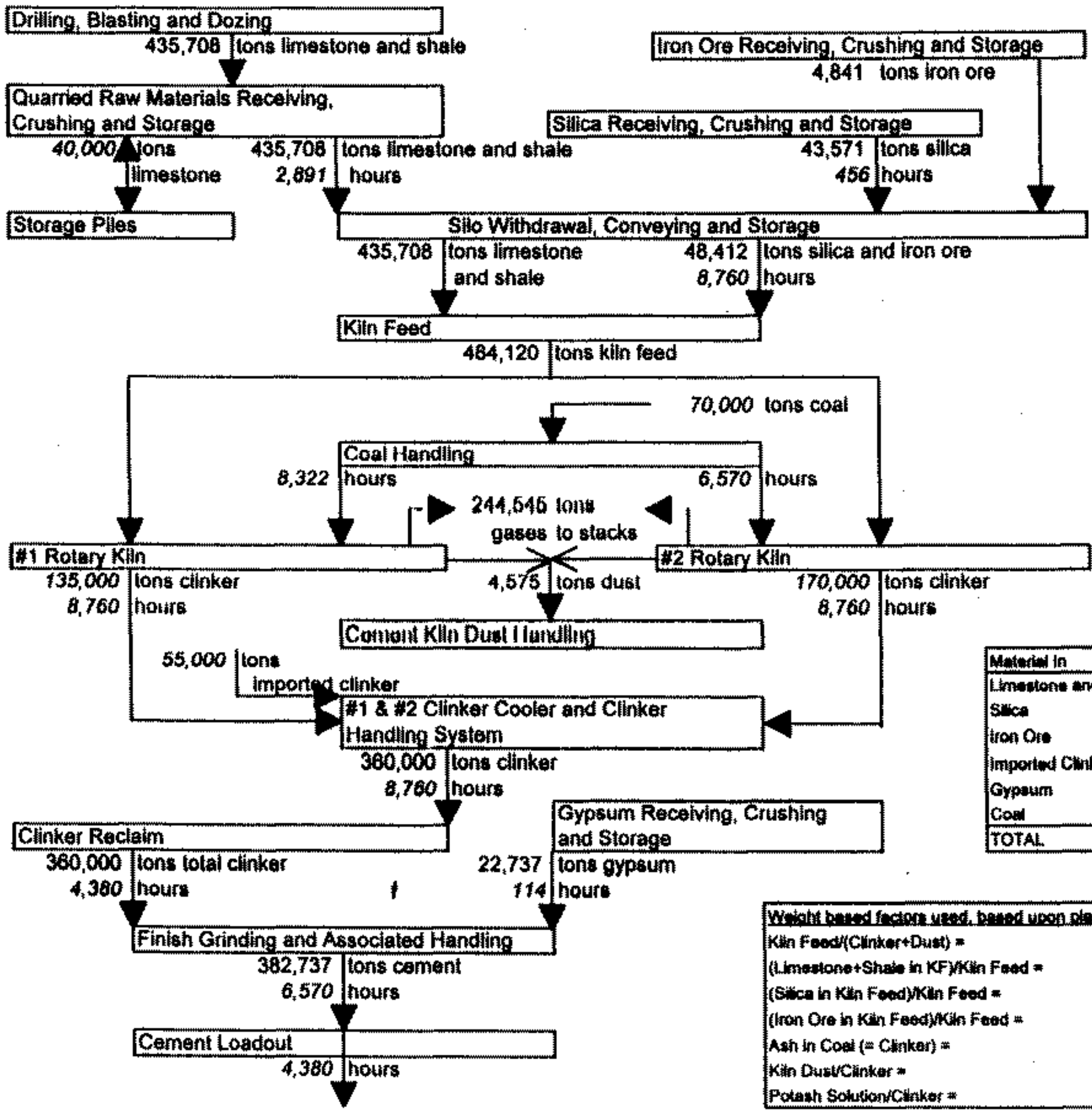
ASH GROVE CEMENT COMPANY, INKOM PLANT; SUMMARY OF PROPOSED POTENTIAL EMISSIONS AND THROUGHPUT RATES

	Proposed					Limits in Tier II Permit of 12/04/95				
	MO. AVG. TON/HR	~~TON/YR~~	PILE ACRES	MMBtu/hr	MMBtu/yr	MO. AVG. TON/HR	~~TON/YR~~	PILE ACRES	MMBtu/hr	MMBtu/yr
Kiln #1	15.4	ann. avg.		96	797,000	12.5	ann. avg.		96	797,000
Kiln #2	19.4	ann. avg.		113	938,000	16.7	ann. avg.		113	938,000
Limestone Receiving, Crushing and Storage	200	435,708	4			200	400,000	4		
Iron Ore Receiving, Crushing and Storage	200	4,841	0.4			200	4,000	0.4		
Silica Receiving, Crushing and Storage	200	43,571	1			98	40,000	1		
Gypsum Receiving, Crushing and Storage	200	22,737	0.5			200	21,000	0.5		
Silo Withdrawal, Conveying & Storage	75	484,120				60	450,000			
Coal Handling	280	70,000	1			280	70,000	1		
Cement Kiln Dust Handling	20	4,575	1			20	5,000	1		
Finish Grinding and Associated Handling	78	382,737				3*26	3*175,200			
Cement Loadout		382,737					370,000			

Ash Grove Cement Company, Inkom Plant

General Process Flow Diagram for Proposed Annual Potential Throughput Rates

Note: italicized (blue) numbers can be entered, the rest are calculated; hourly values are average annual



Material In	tons	Material Out	tons
Limestone and Shale	435,708	Cement	382,737
Silica	43,571	Kiln Dust	4,575
Iron Ore	4,841	Kiln Gases to stack	244,545
Imported Clinker	55,000		
Gypsum	22,737		
Coal	70,000		
TOTAL	631,857	TOTAL	631,857

Weight based factors used, based upon plant experience and plans:

Kiln Feed/(Clinker+Dust) =	*1.60*	Coal/Clinker =	*0.23*
(Limestone+Shale in KF)/Kiln Feed =	*0.90*	Tires/Clinker =	*0.01*
(Silica in Kiln Feed)/Kiln Feed =	*0.09*	Oil/Clinker =	*0.03*
(Iron Ore in Kiln Feed)/Kiln Feed =	*0.01*	Gypsum in Cement/Cement =	*0.06*
Ash in Coal (= Clinker) =	*0.1*	# Grinding Aid/ton Cement =	*1.0*
Kiln Dust/Clinker =	*0.015*		
Potash Solution/Clinker =	*0.04*		

ASH GROVE CEMENT COMPANY, INKOM PLANT; PARTICULATE EMISSIONS FROM POINT SOURCES

ID No.	Area served	Source Description	Flow Rate (b) acfm	deg. F	PM gr/dscf	Ref.	Flow Rate dscfm	Operating Hours hrs/yr	PM		PM_{10} Fraction %	PM_{10}	
									lb/hr	ton/yr		lb/hr	ton/yr
C1	KILN # 1	ESP # 1	39294	469	0.0607	a	22333	8760	11.61	50.84	85%	9.87	43.21
C2	KILN # 2	ESP # 2	N/A	351	0.0514	a	28167	8760	12.99	56.90	31%	4.07	17.82
C3	DRAGS/COOLER	BAGHOUSE # 1	2800	140	0.030	c	2464	8760	0.63	2.78	85%	0.54	2.36
C4	CLINKER ELEVATOR	BAGHOUSE # 2	3992	129	0.030	c	3579	8760	0.92	4.03	85%	0.78	3.43
C5	CLINKER/SILO	BAGHOUSE # 3	3000	100	0.030	c	2829	4380	0.73	1.59	85%	0.62	1.35
C6	CLINKER RECLAIM	BAGHOUSE # 4	600	70	0.030	c	598	4380	0.15	0.34	85%	0.13	0.29
C7	FINISH MILLS #1 & # 2	BAGHOUSE # 5	7600	190	0.030	c	6174	6570	1.59	5.21	85%	1.35	4.43
C8	FINISH MILL #3	BAGHOUSE # 6	10000	190	0.030	c	8123	6570	2.09	6.86	85%	1.78	5.83
C10	BULK LOADING	BAGHOUSE # 7	1200	70	0.030	c	1195	4380	0.31	0.67	85%	0.26	0.57
C9	SILOS/PACKAGING	BAGHOUSE # 8	11000	70	0.030	c	10958	6570	2.82	9.26	85%	2.40	7.87
								TOTALS:	33.84	138.47		21.79	87.16

Notes:

(a) Hourly rate from 12/4/95 Tier II permit divided with flow rate

(b) From source test data for kiln precipitators; baghouse fan design for baghouses

(c) From previous emission estimates (100995.xls). Air Pollution Engineering Manual, 1992, p.751 would justify 0.02 gr/dscf, trhoughput rate based factors in AP-42, 5th edt., Table 11.6-4 would result in even lower emission rates.

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROCESS FUGITIVE EMISSIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1								THROUGHPUT				EMISSION FACTORS							EMISSIONS			
2	SOURCE DESCRIPTION				HRS	DAYS	HRS		MAX.	AVG.		TSP	PM10		PM10	CONTROL			TSP		PM10	
3	CODE		NAME FROM	NAME TO	/DAY	*/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
4	DRILLING, BLASTING AND DOZING																					
5	F	1	DRILLING		24	0	320	LIMESTONE			435,708	0.0003	0.0001	a	36%	0%	0%	0%		0.06		0.02
6	F	2	BLASTING		24	0	-	LIMESTONE				2.6500	0.1300	b		0%	0%	0%	2.65	0.01	0.13	0.00
7	F	3	DOZING	D9L			191	LIMESTONE			435,708	0.0029	0.0014	c	48%					0.00		0.00
8				D10N			1,955	LIMESTONE			435,708	0.0029	0.0014	c	48%					0.00		0.00
9																		Totals:	2.65	0.07	0.13	0.02
10	LIMESTONE RECEIVING, CRUSHING AND STORAGE																					
11	F	4	LOADER	FEEDER	8	344	2,753	LIMESTONE	200	158	435,708	0.0002	0.0001	c	48%	0%	0%	80%	0.01	0.01	0.00	0.00
12	F	5	FEEDER	JAW CRUSHER	8	344	2,753	LIMESTONE	200	158	435,708	0.0007	0.0003	c	48%	50%	0%	90%	0.01	0.01	0.00	0.00
13	F	6	JAW CRUSHER	#1 INCLINE BELT	8	344	2,753	LIMESTONE	200	158	435,708	0.0029	0.0014	c	48%	50%	0%	90%	0.02	0.03	0.01	0.02
14	F	7	#1 INCLINE BELT	#2 INCLINE BELT	8	344	2,753	LIMESTONE	200	198	544,635	0.0029	0.0014	c	48%	50%	0%	60%	0.12	0.16	0.06	0.08
15	F	14	#2 INCLINE BELT	SCREEN #1	8	361	2,891	LIMESTONE	200	188	544,635	0.0029	0.0014	c	48%	20%	0%	90%	0.04	0.08	0.02	0.03
16	F	15	SCREEN #1	CROSS CTRY. BELT	8	361	2,891	LIMESTONE	200	151	435,708	0.0029	0.0014	c	48%	20%	0%	90%	0.04	0.05	0.02	0.02
17	F	16	SCREEN #1	HAMMER MILL	8	361	2,891	LIMESTONE	200	38	108,927	0.0007	0.0003	c	48%	20%	0%	90%	0.00	0.00	0.00	0.00
18	F	17	HAMMER MILL	#1 INCLINE BELT	8	361	2,891	LIMESTONE	200	38	108,927	0.0029	0.0014	c	48%	50%	0%	90%	0.01	0.01	0.00	0.00
19	F	18	CROSS CTRY. BELT	BELT B	8	361	2,891	LIMESTONE	200	151	435,708	0.0029	0.0014	c	48%	20%	0%	0%	0.35	0.51	0.17	0.24
20	F	19	BELT B	BELT C	8	361	2,891	LIMESTONE	200	151	435,708	0.0029	0.0014	c	48%	20%	0%	0%	0.35	0.51	0.17	0.24
21	F	20	BELT C	SILOS (3)	8	361	2,891	LIMESTONE	200	151	435,708	0.0029	0.0014	c	48%	20%	0%	90%	0.04	0.05	0.02	0.02
22	STOCKPILE CRUSHED ROCK:																					
23	F	24	CROSS CTRY. BELT	CHUTE	8	25	200	LIMESTONE	200	200	40,000	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.05	0.22	0.02
24	F	25	CHUTE	GROUND	8	25	200	LIMESTONE	200	200	40,000	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.05	0.22	0.02
25																		Totals:	1.91	1.49	0.92	0.72
26	IRON ORE RECEIVING, CRUSHING AND STORAGE																					
27	F	4	LOADER	FEEDER	2	12	24	IRON ORE	200	200.0	4,841	0.0002	0.0001	c	48%	0%	0%	80%	0.01	0.00	0.00	0.00
28	F	5	FEEDER	JAW CRUSHER	2	12	24	IRON ORE	200	200	4,841	0.0007	0.0003	c	48%	50%	0%	90%	0.01	0.00	0.00	0.00
29	F	6	JAW CRUSHER	#1 INCLINE BELT	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	50%	0%	90%	0.03	0.00	0.01	0.00
30	F	7	#1 INCLINE BELT	#2 INCLINE BELT	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	50%	0%	60%	0.12	0.00	0.06	0.00
31	F	8	#2 INCLINE BELT	#3 INCLINE BELT	2	12	24	IRON ORE	200	0	-	0.0029	0.0014	c	48%	20%	0%	90%	0.00	0.00	0.00	-
32	F	9	#3 INCLINE BELT	SCREEN #2	2	12	24	IRON ORE	200	0	-	0.0313	0.0150	c	48%	20%	0%	90%	0.00	0.00	0.00	-
33	F	10	SCREEN #2	CROSS CTRY. BELT	2	12	24	IRON ORE	200	0	-	0.0029	0.0014	c	48%	20%	0%	90%	0.00	0.00	0.00	-
34	F	11	SCREEN #2	CONE CRUSHER	2	0	-	IRON ORE	200	n/a	-	0.0029	0.0014	c	48%	20%	0%	90%	-	0.00	-	-
35	F	12	CONE CRUSHER	#4 INCLINE BELT	2	0	-	IRON ORE	200	n/a	-	0.0029	0.0014	c	48%	20%	0%	0%	-	0.00	-	-
36	F	13	#4 INCLINE BELT	#2 INCLINE BELT	2	0	-	IRON ORE	200	n/a	-	0.0029	0.0014	c	48%	20%	0%	0%	-	0.00	-	-
37	F	14	#2 INCLINE BELT	SCREEN #1	2	12	24	IRON ORE	200	200	4,841	0.0313	0.0150	c	48%	20%	0%	90%	0.50	0.01	0.24	0.00
38	F	15	SCREEN #1	CROSS CTRY. BELT	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	20%	0%	90%	0.05	0.00	0.02	0.00
39	F	16	SCREEN #1	HAMMER MILL	2	12	24	IRON ORE	200	0	-	0.0007	0.0003	c	48%	20%	0%	90%	0.00	0.00	0.00	-
40	F	17	HAMMER MILL	#1 INCLINE BELT	2	12	24	IRON ORE	200	0	-	0.0029	0.0014	c	48%	50%	0%	90%	0.00	0.00	0.00	-
41	F	18	CROSS CTRY. BELT	BELT B	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.01	0.22	0.00
42	F	19	BELT B	BELT C	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.01	0.22	0.00
43	F	20	BELT C	SILOS (3)	2	12	24	IRON ORE	200	200	4,841	0.0029	0.0014	c	48%	20%	0%	90%	0.05	0.00	0.02	0.00
44																		Totals:	1.69	0.02	0.81	0.01
45	SILICA RECEIVING, CRUSHING AND STORAGE																					
46	F	4	LOADER	FEEDER	4	114	456	SILICA	200	96	43,571	0.0002	0.0001	c	48%	0%	0%	80%	0.00	0.00	0.00	0.00
47	F	5	FEEDER	JAW CRUSHER	4	114	456	SILICA	200	96	43,571	0.0007	0.0003	c	48%	50%	0%	90%	0.00	0.00	0.00	0.00
48	F	6	JAW CRUSHER	#1 INCLINE BELT	f 4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	50%	0%	90%	0.01	0.00	0.01	0.00
49	F	7	#1 INCLINE BELT	#2 INCLINE BELT	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	50%	0%	80%	0.06	0.01	0.03	0.01
50	F	8	#2 INCLINE BELT	#3 INCLINE BELT	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	90%	0.02	0.01	0.01	0.00
51	F	9	#3 INCLINE BELT	SCREEN #2	4	114	456	SILICA	200	96	43,571	0.0313	0.0150	c	48%	20%	0%	90%	0.24	0.05	0.11	0.03
52	F	10	SCREEN #2	CROSS CTRY. BELT	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	90%	0.02	0.01	0.01	0.00
53	F	11	SCREEN #2	CONE CRUSHER	4	114	456	SILICA	200	96	43,571	0.0007	0.0003	c	48%	20%	0%	90%	0.01	0.00	0.00	0.00
54	F	12	CONE CRUSHER	#4 INCLINE BELT	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02
55	F	13	#4 INCLINE BELT	#2 INCLINE BELT	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02
56	F	18	CROSS CTRY. BELT	BELT B	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02
57	F	19	BELT B	BELT C	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02
58	F	20	BELT C	SILOS (3)	4	114	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	90%	0.02	0.01	0.01	0.00
59	F	24	CROSS CTRY. BELT	CHUTE	8	57	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROCESS FUGITIVE EMISSIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1								THROUGHPUT					EMISSION FACTORS							EMISSIONS		
2	SOURCE DESCRIPTION				HRS	DAYS	HRS		MAX.	AVG.		TSP	PM10		PM10	CONTROL			TSP		PM10	
3	CODE		NAME FROM	NAME TO	/DAY	/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
60	F	25	CHUTE	GROUND	8	57	456	SILICA	200	96	43,571	0.0029	0.0014	c	48%	20%	0%	0%	0.22	0.05	0.11	0.02
61																		Totals:	1.73	0.39	0.83	0.19
62	GYPSUM RECEIVING, CRUSHING AND STORAGE																					
63	F	4	LOADER	FEEDER	3	38	114	GYPSUM	200	200	22,737	0.0002	0.0001	c	48%	0%	0%	80%	0.01	0.00	0.00	0.00
64	F	5	FEEDER	JAW CRUSHER	3	38	114	GYPSUM	200	200	22,737	0.0007	0.0003	c	48%	50%	0%	90%	0.01	0.00	0.00	0.00
65	F	6	JAW CRUSHER	#1 INCLINE BELT	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	50%	0%	90%	0.03	0.00	0.01	0.00
66	F	7	#1 INCLINE BELT	#2 INCLINE BELT	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	50%	0%	90%	0.03	0.00	0.01	0.00
67	F	14	#2 INCLINE BELT	SCREEN #1	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	50%	0%	60%	0.12	0.01	0.06	0.00
68	F	15	SCREEN #1	CROSS CTRY. BELT	3	38	114	GYPSUM	200	200	22,737	0.0313	0.0150	c	48%	20%	0%	90%	0.50	0.03	0.24	0.01
69	F	16	SCREEN #1	HAMMER MILL	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	20%	0%	90%	0.05	0.00	0.02	0.00
70	F	17	HAMMER MILL	#1 INCLINE BELT	3	38	114	GYPSUM	200	200	22,737	0.0007	0.0003	c	48%	20%	0%	90%	0.01	0.00	0.01	0.00
71	F	21	CROSS CTRY. BELT	GYPSUM BELT	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	50%	0%	90%	0.03	0.00	0.01	0.00
72	F	22	GYPSUM BELT	CHUTE	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.03	0.22	0.01
73	F	23	CHUTE	GYPSUM BIN	3	38	114	GYPSUM	200	200	22,737	0.0029	0.0014	c	48%	20%	0%	0%	0.47	0.03	0.22	0.01
74																		Totals:	2.15	0.12	1.03	0.06
75	SILO WITHDRAWAL, CONVEYING AND RAW GRINDING																					
76	F	26	SILO FEEDER	FEED BELT	24	365	8,760	LIMESTONE	75	24	217,854	0.0029	0.0014	c	48%	0%	0%	90%	0.01	0.03	0.00	0.02
77	F	27	SILO FEEDER	FEED BELT	24	365	8,760	LIMESTONE	75	24	217,854	0.0029	0.0014	c	48%	0%	0%	90%	0.01	0.03	0.00	0.02
78	F	28	SILO FEEDER	FEED BELT	24	365	8,760	SILICA	75	6	43,571	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
79	F	29	SILO FEEDER	FEED BELT	24	365	8,760	IRON ORE	75	1	4,841	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
80	F	30	FEED BELT	MILL #4	24	365	8,760	LIMESTONE	75	49	435,708	0.0029	0.0014	c	48%	0%	0%	90%	0.01	0.06	0.01	0.03
81					24	365	8,760	SILICA	75	6	43,571	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
82					24	365	8,760	IRON ORE	75	1	4,841	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
83	[redacted]										484,120	0.0029	0.0014	c	48%	0%	0%	90%	0.02	0.07	0.01	0.03
84	F	32	FEED BELT	MILL #3 (BACK-UP)	24	0	-	LIMESTONE	75	n/a	-	0.0029	0.0014	c	48%	0%	0%	90%	-	-	-	-
85					24	0	-	SILICA	75	n/a	-	0.0029	0.0014	c	48%	0%	0%	90%	-	-	-	-
86					24	0	-	IRON ORE	75	n/a	-	0.0029	0.0014	c	48%	0%	0%	90%	-	-	-	-
87	F	33	MILL #3	SLURRY TANK	24	0	-	RAW MEAL	75	n/a	-	0.0029	0.0014	c	48%	0%	0%	90%	-	-	-	-
88																		Totals:	0.05	0.21	0.02	0.10
89	COAL HANDLING																					
90	F	34	DUMP	HOPPER	24	0	-	COAL	280	280	70,000	0.0002	0.0001	c	48%	0%	0%	0%	0.1	0.01	0.03	0.00
91	F	35	HOPPER	BELT	24	0	-	COAL	280	280	70,000	0.0029	0.0014	c	48%	0%	0%	0%	0.8	0.10	0.39	0.05
92	F	36	BELT	COAL ELEVATOR	24	0	-	COAL	280	280	70,000	0.0029	0.0014	c	48%	0%	0%	0%	0.8	0.10	0.39	0.05
93	F	37	COAL ELEVATOR	COAL SILO	24	0	-	COAL	280	280	70,000	0.0029	0.0014	c	48%	0%	0%	0%	0.8	0.10	0.39	0.05
94	F	38	COAL SILO	BELT	24	347	8,322	COAL	10	8	70,000	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
95	F	39	BELT	#1 COAL MILL	24	347	8,322	COAL	10	8	70,000	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
96	F	40	COAL SILO	BELT	24	274	6,570	COAL	10	11	70,000	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
97	F	41	BELT	#2 COAL MILL	24	274	6,570	COAL	10	11	70,000	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.01	0.00	0.00
98																		Totals:	2.52	0.35	1.21	0.17
99	#1 & #2 CLINKER COOLERS AND CLINKER HANDLING SYSTEMS																					
100	KILN SYSTEM #1:																					
101	F	42	SLURRY	#1 KILN	24	365	8,760	RAW MEAL	60	24	214,283	0.0000	0.0000	d	50%	0%	0%	99%	0.00	0.00	0.00	0.00
102	F	43	#1 KILN	COOLER	24	365	8,760	CLINKER	20	15.4	135,000	0.1500	0.0300	d	20%	0%	0%	90%	0.23	1.01	0.05	0.20
103	F	44	COOLER	DRAG #1	24	365	8,760	CLINKER	20	15.4	135,000	0.1500	0.0300	d	20%	0%	0%	90%	0.23	1.01	0.05	0.20
104	F	45	DRAG #1	DRAG #3	24	365	8,760	CLINKER	20	15.4	135,000	0.1500	0.0300	d	20%	0%	95%	90%	0.01	0.05	0.00	0.01
105	KILN SYSTEM #2:																					
106	F	46	SLURRY	#2 KILN	24	365	8,760	RAW MEAL	90	30.8	269,837	0.0000	0.0000	d	20%	0%	0%	99%	0.00	0.00	0.00	0.00
107	F	47	#2 KILN	#2 COOLER	24	365	8,760	CLINKER	30	19.4	170,000	0.1500	0.0300	d	20%	0%	95%	90%	0.01	0.06	0.00	0.01
108	F	48	#2 COOLER	DRAG #2	24	365	8,760	CLINKER	30	19.4	170,000	0.1500	0.0300	d	20%	0%	95%	90%	0.01	0.06	0.00	0.01
109	F	49	DRAG #2	DRAG #3	24	365	8,760	CLINKER	30	19.4	170,000	0.1500	0.0300	d	20%	0%	95%	90%	0.01	0.06	0.00	0.01
110	F	49A	DRAG #2	AUX. DRAG	24	365	8,760	CLINKER	30	0.0	-	0.1500	0.0300	d	20%	0%	95%	80%	0.00	0.00	0.00	0.00
111	F	49B	AUX DRAG	TRACK BIN	24	365	8,760	CLINKER	30	0.0	-	0.1500	0.0300	d	20%	0%	95%	10%	0.00	0.00	0.00	0.00
112	F	49C	TRACK BIN	CRANE	24	365	8,760	CLINKER	30	0.0	-	0.1500	0.0300	d	20%	0%	0%	50%	0.00	0.00	0.00	0.00
113	CLINKER RECEIVING:																					
114	F	49D	RAIL CAR	TRACK BIN	24	365	8,760	CLINKER	500	250.0	55,000	0.1500	0.0300	d	20%	0%	0%	20%	30.00	3.30	6.00	0.66
115	CLINKER HANDLING:																					

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROCESS FUGITIVE EMISSIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1																						
2	SOURCE DESCRIPTION				THROUGHPUT							EMISSION FACTORS							EMISSIONS			
					HRS	DAYS	HRS		MAX.	AVG.		TSP	PM10		PM10	CONTROL			TSP		PM10	
3	CODE		NAME FROM	NAME TO	/DAY	/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
116	F	50	DRAG #3	CLINKER ELEVATO	24	365	8,760	CLINKER	50	41.1	360,000	0.1500	0.0750	d	50%	0%	95%	20%	0.25	1.08	0.12	0.54
117	F	51	CLINKER ELEVATO	PLENUM BOX	24	365	8,760	CLINKER	50	12.3	108,000	0.1500	0.0750	d	50%	0%	95%	20%	0.07	0.32	0.04	0.16
118	F	52	PLENUM BOX	BIN	24	365	8,760	CLINKER	50	12.3	108,000	0.5000	0.2500	d	50%	0%	95%	20%	0.25	1.08	0.12	0.54
119	F	53	BIN	CRANE	24	365	8,760	CLINKER	50	18.6	163,000	0.5000	0.2500	d	50%	0%	0%	20%	7.44	32.60	3.72	16.30
120	F	54	CRANE	CRANEWAY STRG.	24	365	8,760	CLINKER	50	18.6	163,000	0.5000	0.2500	d	50%	0%	0%	20%	7.44	32.60	3.72	16.30
121	F	55	CLINKER ELEVATO	DRAG #4	24	365	8,760	CLINKER	50	28.8	252,000	0.1500	0.0750	d	50%	0%	95%	0%	0.22	0.95	0.11	0.47
122	F	56	DRAG #4	ELEVATOR #2	24	365	8,760	CLINKER	50	28.8	252,000	0.1500	0.0750	d	50%	0%	95%	0%	0.22	0.95	0.11	0.47
123	F	57	ELEVATOR #2	DRAG #5	24	365	8,760	CLINKER	50	6.2	54,000	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.02	0.00	0.01
124	F	58	DRAG #5	CLINKER SILO #1	24	365	8,760	CLINKER	50	2.4	21,060	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.01	0.00	0.00
125	F	59	DRAG #5	CLINKER SILO #2	24	365	8,760	CLINKER	50	2.4	21,060	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.01	0.00	0.00
126	F	60	DRAG #5	CLINKER SILO #3	24	365	8,760	CLINKER	50	1.4	11,880	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.00	0.00	0.00
127	F	61	ELEVATOR #2	STACKER BELT #1	24	365	8,760	CLINKER	50	22.6	198,000	0.1500	0.0750	d	50%	0%	95%	0%	0.17	0.74	0.08	0.37
128	F	62	STACKER BELT #1	STACKER BELT #2	24	365	8,760	CLINKER	50	22.6	198,000	0.1500	0.0750	d	50%	0%	95%	0%	0.17	0.74	0.08	0.37
129	F	63	STACKER BELT #2	STACKER	24	365	8,760	CLINKER	50	22.6	198,000	0.1500	0.0750	d	50%	0%	95%	0%	0.17	0.74	0.08	0.37
130	F	64	STACKER	PILE (OPEN AREA)	24	365	8,760	CLINKER	50	22.6	198,000	0.5000	0.2500	d	50%	0%	95%	50%	0.28	1.24	0.14	0.62
131																		Totals:	47.20	78.65	14.45	37.65
132	CLINKER RECLAIM																					
133	F	65A	STORAGE	CRANE	24	365	8,760	CLINKER	300	18.6	163,000	0.5000	0.2500	d	50%	0%	0%	50%	4.65	20.38	2.33	10.19
134	F	65	CRANE	BIN #1	24	365	8,760	CLINKER	300	6.2	54,333	0.5000	0.2500	d	50%	0%	0%	50%	1.55	6.79	0.78	3.40
135	F	66	CRANE	BIN #2	24	365	8,760	CLINKER	300	6.2	54,333	0.5000	0.2500	d	50%	0%	0%	50%	1.55	6.79	0.78	3.40
136	F	67	CRANE	BIN #3	24	365	8,760	CLINKER	300	6.2	54,333	0.5000	0.2500	d	50%	0%	0%	50%	1.55	6.79	0.78	3.40
137	F	68	GALLERY PILE	RECLAIM BELT #1	24	365	8,760	CLINKER	100	5.7	49,500	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.02	0.00	0.01
138	F	69	GALLERY PILE	RECLAIM BELT #1	24	365	8,760	CLINKER	100	5.7	49,500	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.02	0.00	0.01
139	F	70	GALLERY PILE	RECLAIM BELT #2	24	365	8,760	CLINKER	100	5.7	49,500	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.02	0.00	0.01
140	F	71	GALLERY PILE	RECLAIM BELT #2	24	365	8,760	CLINKER	100	5.7	49,500	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.02	0.00	0.01
141	F	72	RECLAIM BELT #1	RECLAIM BELT #2	24	365	8,760	CLINKER	100	11.3	99,000	0.1500	0.0750	d	50%	0%	95%	90%	0.01	0.04	0.00	0.02
142	F	73	RECLAIM BELT #2	RECLAIM BELT #3	24	365	8,760	CLINKER	100	11.3	99,000	0.1500	0.0750	d	50%	0%	95%	90%	0.01	0.04	0.00	0.02
143	F	74	CLINKER SILO #1	RECLAIM BELT #3	24	365	8,760	CLINKER	100	2.1	18,000	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.01	0.00	0.00
144	F	75	CLINKER SILO #2	RECLAIM BELT #3	24	365	8,760	CLINKER	100	2.1	18,000	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.01	0.00	0.00
145	F	76	CLINKER SILO #3	RECLAIM BELT #3	24	365	8,760	CLINKER	100	2.1	18,000	0.1500	0.0750	d	50%	0%	95%	90%	0.00	0.01	0.00	0.00
146	F	77	RECLAIM BELT #3	ELEVATOR #3	24	365	8,760	CLINKER	100	28.8	252,000	0.1500	0.0750	d	50%	0%	95%	0%	0.22	0.95	0.11	0.47
147	F	78	ELEVATOR #3	CLINKER BIN DRAG	24	365	8,760	CLINKER	100	28.8	252,000	0.1500	0.0750	d	50%	0%	95%	0%	0.22	0.95	0.11	0.47
148	F	79	CLINKER BIN DRAG	BIN #1	24	365	8,760	CLINKER	100	9.6	84,000	0.5000	0.2500	d	50%	0%	95%	0%	0.24	1.05	0.12	0.53
149	F	80	CLINKER BIN DRAG	BIN #2	24	365	8,760	CLINKER	100	9.6	84,000	0.5000	0.2500	d	50%	0%	95%	0%	0.24	1.05	0.12	0.53
150	F	81	CLINKER BIN DRAG	BIN #3	24	365	8,760	CLINKER	100	9.6	84,000	0.5000	0.2500	d	50%	0%	95%	0%	0.24	1.05	0.12	0.53
151																		Totals:	10.49	45.96	5.25	22.96
152	CEMENT KILN DUST HANDLING																					
153	KILN #1 UPSET:																					
154	F	82	MULTICLONE	SCREW	24	5	114	CKD	8	2	229	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
155	F	83	SCREW	ELEVATOR	24	5	114	CKD	8	2	229	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
156	F	84	ELEVATOR	SCREW	24	5	114	CKD	8	2	229	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
157	F	85	SCREW	BIN	24	5	114	CKD	8	2	229	0.2700	0.1350	e	50%	0%	0%	85%	0.08	0.00	0.04	0.00
158	F	109	BIN	LOADER	24	5	114	CKD	8	2	229	0.2700	0.1350	e	50%	0%	0%	0%	0.54	0.03	0.27	0.02
159	F	92	ESP	SCREW	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
160	F	87	SCREW	BUNKER	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	0%	0%	0.14	0.28	0.07	0.14
161	F	88	BUNKER	LOADER	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	0%	0%	0.14	0.28	0.07	0.14
162	KILN #1 DUST RETURN:																					
163	F	82	MULTICLONE	SCREW	24	360	8,646	CKD	8	3	25,920	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.03	0.00	0.02
164	F	83	SCREW	ELEVATOR	24	360	8,646	CKD	8	3	25,920	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.03	0.00	0.02
165	F	84	ELEVATOR	SCREW	24	360	8,646	CKD	8	3	25,920	0.2700	0.1350	e	50%	0%	99%	90%	0.00	0.00	0.00	0.00
166	F	108	SCREW	PADDLE MIXER	24	360	8,646	CKD	8	3	25,920	0.2700	0.1350	e	50%	0%	80%	90%	0.02	0.07	0.01	0.03
167	F	92	PRECIPITATOR	SCREW	24	193	4,643	CKD	4	1	6,415	0.2700	0.1350	e	50%	0%	99%	90%	0.00	0.00	0.00	0.00
168	F	93	SCREW	ELEVATOR	24	193	4,643	CKD	4	1	6,415	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
169	F	94	ELEVATOR	SCREW	24	193	4,643	CKD	4	1	6,415	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
170	F	95	SCREW	LEACH TANK	24	193	4,643	CKD	4	1	6,415	0.2700	0.1350	e	50%	0%	0%	85%	0.06	0.13	0.03	0.06
171	KILN #2 UPSET:																					

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROCESS FUGITIVE EMISSIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1																						
2	SOURCE DESCRIPTION				HRS	DAYS	HRS	THROUGHPUT	MAX.	AVG.		TSP	PM10	EMISSION FACTORS	PM10	CONTROL			EMISSIONS TSP		PM10	
3	CODE		NAME FROM	NAME TO	/DAY	/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
172	F	96	MULTICLONE	SCREW	24	5	114	CKD	5	2	229	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
173	F	97	SCREW	BIN	24	5	114	CKD	5	2	229	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
174	F	98	BIN	LOADER	24	5	114	CKD	5	2	229	0.2700	0.1350	e	50%	0%	0%	0%	0.54	0.03	0.27	0.02
175	F	101	ESP	SCREW	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
176	F	106	SCREW	BUNKER	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	0%	0%	0.14	0.28	0.07	0.14
177	F	107	BUNKER	LOADER	24	172	4,118	CKD	4	1	2,059	0.2700	0.1350	e	50%	0%	0%	0%	0.14	0.28	0.07	0.14
178	KILN #2 DUEST RETURN:																					
179	F	96	MULTICLONE	SCREW	24	360	8,646	CKD		3	21,760	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.03	0.00	0.01
180	F	99	SCREW	ELEVATOR	24	360	8,646	CKD	0	3	21,760	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.03	0.00	0.01
181	F	100	ELEVATOR	PADDLE MIXER	24	360	8,646	CKD	0	3	21,760	0.2700	0.1350	e	50%	0%	90%	90%	0.01	0.03	0.00	0.01
182	F	101	PRECIPITATOR	SCREW	24	193	4,643	CKD	20	1	5,386	0.2700	0.1350	e	50%	0%	99%	90%	0.00	0.00	0.00	0.00
183	F	102	SCREW	SCREW	24	193	4,643	CKD	20	1	5,386	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
184	F	103	SCREW	ELEVATOR	24	193	4,643	CKD	20	1	5,386	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
185	F	104	ELEVATOR	SCREW	24	193	4,643	CKD	20	1	5,386	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
186	F	105	SCREW	LEACH TANK	24	193	4,643	CKD	20	1	5,386	0.2700	0.1350	e	50%	0%	99%	85%	0.00	0.00	0.00	0.00
187																		Totals:	1.82	1.55	0.91	0.77
188	FINISH GRINDING AND ASSOCIATED HANDLING																					
189	MILL #1:																					
190	F	110	CLINKER BIN #1	CLINKER FEEDER	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
191	F	111	CLINKER FEEDER	BELT	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
192	F	112	GYPSUM BIN	CRANE	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
193	F	112A	CRANE	GYPSUM FEEDER	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
194	F	113	GYPSUM FEEDER	BELT	24	208	5,000	GYPSUM	10	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
195	F	114	BELT	MILL #1	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
196					24	208	5,000	GYPSUM	10	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
197					24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	99%	90%	0.01	0.03	0.01	0.02
198	MILL #2:																					
199	F	115	CLINKER BIN #2	CLINKER FEEDER	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
200	F	116	CLINKER FEEDER	BELT	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
201	F	117	GYPSUM BIN	CRANE	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
202	F	117A	CRANE	GYPSUM FEEDER	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
203	F	118	GYPSUM FEEDER	BELT	24	208	5,000	GYPSUM	10	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
204	F	119	BELT	MILL #2	24	208	5,000	CLINKER	40	24	120,000	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
205					24	208	5,000	GYPSUM	40	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
206					24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	99%	90%	0.01	0.03	0.01	0.02
207	F	120	MILL #1	CEMENT ELEVATOR	24	208	5,000	CEMENT	120	77	382,737	0.2700	0.1350	e	50%	0%	99%	90%	0.02	0.05	0.01	0.03
208	F	121	MILL #2	CEMENT ELEVATOR	24	208	5,000	CEMENT	120	77	382,737	0.2700	0.1350	e	50%	0%	99%	90%	0.02	0.05	0.01	0.03
209	F	122	CEMENT ELEVATOR	AIRSLIDE	24	208	5,000	CEMENT	240	153	765,474	0.2700	0.1350	e	50%	0%	99%	90%	0.04	0.10	0.02	0.05
210	F	123	AIRSLIDE	SEPARATOR	24	208	5,000	CEMENT	240	153	765,474	0.2700	0.1350	e	50%	0%	99%	90%	0.04	0.10	0.02	0.05
211	F	124	SEPARATOR	RETURN SCREW	24	208	5,000	CEMENT	240	51	510,316	0.2700	0.1350	e	50%	0%	99%	90%	0.01	0.07	0.01	0.02
212	F	125	RETURN SCREW	MILL #1	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	99%	90%	0.01	0.03	0.01	0.02
213	F	126	RETURN SCREW	MILL #2	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	99%	90%	0.01	0.03	0.01	0.02
214	F	127	SEPARATOR	AIRSLIDE	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%		99%	0.14	0.34	0.07	0.17
215	F	128	AIRSLIDE	COOLER	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%		99%	0.14	0.34	0.07	0.17
216	F	129	COOLER	FK PUMP	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%		99%	0.14	0.34	0.07	0.17
217	MILL #3:																					
218	F	130	CLINKER BIN #3	CLINKER FEEDER	24	208	5,000	CLINKER	40	26	127,579	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
219	F	131	CLINKER FEEDER	BELT	24	208	5,000	CLINKER	40	26	127,579	0.1500	0.0300	d	20%	0%	95%	90%	0.02	0.05	0.00	0.01
220	F	132	ROCK BIN	ROCK FEEDER	24	208	5,000	ROCK	75	0	-	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
221	F	133	ROCK FEEDER	BELT	24	208	5,000	ROCK	75	0	-	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
222	F	134	GYPSUM BIN	CRANE	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
223	F	134A	CRANE	GYPSUM FEEDER	24	208	5,000	GYPSUM	300	2	7,579	0.0029	0.0014	c	48%	0%	0%	90%	0.00	0.00	0.00	0.00
224	F	135	GYPSUM FEEDER	BELT	24	208	5,000	GYPSUM	10	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
225	F	136	BELT	MILL #3	24	208	5,000	CLINKER	40	26	127,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
226					24	208	5,000	ROCK	75	0	-	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00
227					24	208	5,000	GYPSUM	10	2	7,579	0.0029	0.0014	c	48%	0%	95%	90%	0.00	0.00	0.00	0.00

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROCESS FUGITIVE EMISSIONS

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
1								THROUGHPUT				EMISSION FACTORS							EMISSIONS			
2	SOURCE DESCRIPTION				HRS	DAYS	HRS		MAX.	AVG.		TSP	PM10		PM10	CONTROL			TSP		PM10	
3	CODE		NAME FROM	NAME TO	/DAY	/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
228					24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	95%	90%	0.07	0.17	0.03	0.09
229	F	137	MILL #3	CEMENT ELEVATOR	24	208	5,000	CEMENT	120	77	382,737	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.26	0.05	0.13
230					24	208	5,000	Masonry	120	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
231	F	138	CEMENT ELEVATOR	AIRSLIDE	24	208	5,000	CEMENT	120	77	382,737	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.26	0.05	0.13
232					24	208	5,000	Masonry	120	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
233	F	139	AIRSLIDE	SEPARATOR #2	24	208	5,000	CEMENT	120	77	382,737	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.26	0.05	0.13
234					24	208	5,000	Masonry	120	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
235	F	140	SEPARATOR #2	RETURN SCREW	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	95%	90%	0.07	0.17	0.03	0.09
236					24	208	5,000	Masonry	80	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
237	F	141	RETURN SCREW	MILL #3	24	208	5,000	CEMENT	80	51	255,158	0.2700	0.1350	e	50%	0%	95%	90%	0.07	0.17	0.03	0.09
238					24	208	5,000	Masonry	80	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
239	F	142	SEPARATOR #2	AIRSLIDE	24	208	5,000	CEMENT	40	26	127,579	0.2700	0.1350	e	50%	0%	95%	90%	0.03	0.09	0.02	0.04
240					24	208	5,000	Masonry	40	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
241	F	143	AIRSLIDE	COOLER	24	208	5,000	CEMENT	40	26	127,579	0.2700	0.1350	e	50%	0%	95%	90%	0.03	0.09	0.02	0.04
242					24	208	5,000	Masonry	40	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
243	F	144	COOLER	FK PUMP	24	208	5,000	CEMENT	40	26	127,579	0.2700	0.1350	e	50%	0%	95%	90%	0.03	0.09	0.02	0.04
244					24	208	5,000	Masonry	40	0	-	0.2700	0.1350	e	50%	0%	95%	90%	0.00	0.00	0.00	0.00
245	TO CEMENT SILOS FROM MILLS #1 & #2:																					
246	F	145	FK PUMP (MILL#1,#2	SILO #1	24	16	375	CEMENT	80	0	-	0.2700	0.1350	e	50%	0%	99%	0%	0.00	0.00	0.00	0.00
247	F	146	FK PUMP (MILL#1,#2	SILO #2	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
248	F	147	FK PUMP (MILL#1,#2	SILO #3	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
249	F	148	FK PUMP (MILL#1,#2	SILO #4	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
250	F	149	FK PUMP (MILL#1,#2	SILO #5	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
251	F	150	FK PUMP (MILL#1,#2	SILO #6	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
252	F	151	FK PUMP (MILL#1,#2	SILO #7	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
253	F	152	FK PUMP (MILL#1,#2	SILO #8	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
254	F	153	FK PUMP (MILL#1,#2	SILO #9	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
255	F	154	FK PUMP (MILL#1,#2	SILO #10	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
256	F	155	FK PUMP (MILL#1,#2	SILO #11	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
257	F	156	FK PUMP (MILL#1,#2	SILO #12	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
258	F	157	FK PUMP (MILL#1,#2	SILO #13	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
259	F	158	FK PUMP (MILL#1,#2	SILO #14	24	16	375	CEMENT	80	39	14,737	0.2700	0.1350	e	50%	0%	99%	0%	0.11	0.02	0.05	0.01
260	TO CEMENT SILOS FROM MILL #3:																					
261	F	159	FK PUMP (MILL #3)	SILO #1	24	15	348	Masonry	40	0	-	0.2700	0.1350	e	50%	0%	99%	0%	0.00	0.00	0.00	0.00
262	F	160	FK PUMP (MILL #3)	SILO #2	24	15	348	CEMENT	40	18	6,376	0.2700	0.1350	e	50%	0%	99%	0%	0.05	0.01	0.02	0.00
263	F	161	FK PUMP (MILL #3)	SILO #3	24	15	348	CEMENT	40	18	6,376	0.2700	0.1350	e	50%	0%	99%	0%	0.05	0.01	0.02	0.00
264	F	162	FK PUMP (MILL #3)	SILO #4	24	15	348	CEMENT	40	18	6,376	0.2700	0.1350	e	50%	0%	99%	0%	0.05	0.01	0.02	0.00
265	F	163	FK PUMP (MILL #3)	SILO #5	24	15	348	CEMENT	40	18	6,376	0.2700	0.1350	e	50%	0%	99%	0%	0.05	0.01	0.02	0.00
266	F	164	FK PUMP (MILL #3)	SILO #6	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
267	F	165	FK PUMP (MILL #3)	SILO #7	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
268	F	166	FK PUMP (MILL #3)	SILO #8	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
269	F	167	FK PUMP (MILL #3)	SILO #9	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
270	F	168	FK PUMP (MILL #3)	SILO #10	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
271	F	169	FK PUMP (MILL #3)	SILO #11	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
272	F	170	FK PUMP (MILL #3)	SILO #12	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
273	F	171	FK PUMP (MILL #3)	SILO #13	24	15	348	CEMENT	40	18	6,376	0.2700	0.1350	e	50%	0%	99%	0%	0.05	0.01	0.02	0.00
274	F	172	FK PUMP (MILL #3)	SILO #14	24	15	348	CEMENT	40	5	1,686	0.2700	0.1350	e	50%	0%	99%	0%	0.01	0.00	0.01	0.00
275																						
276	CEMENT LOADOUT																	Totals:	3.11	3.79	1.51	1.77
277	SILO BOTTOM WITHDRAWAL SYSTEM:																					
278	F	173	SILO #1	SCREW #1	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
279	F	174	SILO #2	SCREW #1	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
280	F	175	SILO #3	SCREW #1	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
281	F	176	SILO #4	SCREW	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
282	F	177	SILO #5	SCREW	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
283	F	178	SCREW	SCREW #1	24	38	911	CEMENT	150	75	68,346	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.05	0.05	0.02

2	SOURCE DESCRIPTION				HRS	DAYS	HRS															
3	CODE		NAME FROM	NAME TO	/DAY	/YR	/YR	MATERIAL	TON/H	TON/H	TON/YR	LB/TON	LB/TON	REF	FRAC.	MOIST.	CAPT.	BUILD.	LB/HR	T/YR	LB/HR	T/YR
284	F	179	SCREW #1	ELEVATOR # 1	24	38	911	CEMENT	150	75	68,346	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.05	0.05	0.02
285	F	180	SILO #6	SCREW #2	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
286	F	181	SILO #7	SCREW #2	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
287	F	182	SILO #8	SCREW #2	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
288	F	183	SCREW #2	SCREW #4	24	23	547	CEMENT	150	75	41,008	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.03	0.05	0.01
289	F	184	SILO #12	SCREW #3	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
290	F	185	SILO #13	SCREW #3	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
291	F	186	SILO #14	SCREW #3	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
292	F	187	SCREW #3	SCREW #4	24	23	547	CEMENT	150	75	41,008	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.03	0.05	0.01
293	F	188	SCREW #4	ELEVATOR #1	24	46	1,094	CEMENT	150	75	82,015	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.06	0.05	0.03
294	F	189	SILO #9	SCREW #6	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
295	F	190	SILO #10	SCREW #6	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
296	F	191	SILO #11	SCREW #6	24	8	182	CEMENT	150	75	13,669	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.01	0.05	0.00
297	F	192	SCREW #6	SCREW #5	24	23	547	CEMENT	150	75	41,008	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.03	0.05	0.01
298	F	193	SCREW #5	ELEVATOR #1	24	23	547	CEMENT	150	75	41,008	0.2700	0.1350	e	50%	0%	95%	90%	0.10	0.03	0.05	0.01
299	F	194	ELEVATOR #1	DISCH. SCREW	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	90%	0.30	0.13	0.15	0.06
300	F	195	DISCH. SCREW	RAIL LOADOUT	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	0%	-	0.00	-	0.00
301	TRUCK LOADING SYSTEM:																					
302	F	196	DISCH. SCREW	TRANSFER SCREW	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
303	F	197	TRANSFER SCREW	SCREW	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
304	F	198	SCREW	TANK A	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
305	F	199	SCREW	TANK B	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
306	F	200	SCREW	TANK C	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
307	F	201	TANK A	TRUCK LOADOUT	24	24	1,701	CEMENT	500	225	127,579	0.2700	0.1350	e	50%	0%	95%	25%	2.28	0.65	1.14	0.32
308	F	202	TANK B	TRUCK LOADOUT	24	24	1,701	CEMENT	500	225	127,579	0.2700	0.1350	e	50%	0%	95%	25%	2.28	0.65	1.14	0.32
309	F	203	TANK C	TRUCK LOADOUT	24	24	1,701	CEMENT	500	225	127,579	0.2700	0.1350	e	50%	0%	95%	25%	2.28	0.65	1.14	0.32
310	CEMENT BACK SYSTEM:																					
311	F	204	SILOS 9-14	AIRSLIDE	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
312	F	205	AIRSLIDE	ELEVATOR #4	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
313	F	206	SCREW #8	AIRSLIDE	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
314	F	207	AIRSLIDE	ELEVATOR #4	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	99%	0.03	0.01	0.02	0.01
315	F	208	ELEVATOR #4	ELEVATOR #5	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	85%	0.45	0.19	0.23	0.10
316	F	209	ELEVATOR #5	AIRSLIDE	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.19	0.23	0.10
317	F	210	AIRSLIDE	SCREW	24	36	2,552	CEMENT	150	225	191,368	0.2700	0.1350	e	50%	0%	95%	85%	0.45	0.19	0.23	0.10
318	F	211	SCREW	TANK A	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
319	F	212	SCREW	TANK B	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
320	F	213	SCREW	TANK C	24	12	851	CEMENT	150	225	63,789	0.2700	0.1350	e	50%	0%	95%	85%	0.46	0.06	0.23	0.03
321	F	209a	AIRSLIDE	RAIL LOADOUT	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	0%	-	-	-	-
322	CEMENT PACKING:																					
323	F	214	SCREW #1	ELEVATOR #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
324	F	215	SCREW #2	ELEVATOR #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
325	F	216	SCREW #4	ELEVATOR #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
326	F	217	SCREW #5	ELEVATOR #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
327	F	218	ELEVATOR #2	N. S. SCREW	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
328	F	219	N. S. SCREW	BIN #1	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
329	F	220	N. S. SCREW	BIN #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
330	F	221	BIN #1	PACKER # 1	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
331	F	222	BIN #2	PACKER # 2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
332	F	223	BIN #1/ PACKER #1	SPILL AIRSLIDE	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
333	F	224	BIN #2/ PACKER #2	SPILL AIRSLIDE	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
334	F	225	SPILL AIRSLIDE	ELEVATOR #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
335	F	226	ELEVATOR #2	N. S. SCREW	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
336	F	227	N. S. SCREW	BIN #1	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
337	F	228	N. S. SCREW	BIN #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
338	F	229	SILO #6	AIRSLIDE	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-
339	F	230	AIRSLIDE	BIN #2	24	0	-	CEMENT	150	n/a	-	0.2700	0.1350	e	50%	0%	95%	99%	-	-	-	-

ASH GROVE CEMENT COMPANY, INKOM PLANT, 1993 ROAD INPUTS

CATEGORY	MATERIAL		Number of Wheels	TRUCK WEIGHT Empty (Tons)	Loaded (Tons)	Avg (Tons)	Material Net (Tons)	Avg Speed (mph)	Material (T/yr)
RAW MATERIALS	Silica		26	18	53	35	36	8	43,571
	Iron Ore		26	18	53	35	36	8	4,841
	Gypsum		26	18	53	35	36	8	22,737
FUELS	Tires		14	7	17	12	10	8	3,050
	Coal		26	18	53	35	36	8	70,000
	Oil		10	11	25	18	14	8	9,150
ADDITIVES	Grinding Aid		18	13	40	26	28	8	191
SHIPMENTS	Cement (Bulk)		26	18	53	35	36	8	382,737
	Duracem (Bulk)		18	13	40	26	28	8	-
	Potash		18	13	40	26	28	8	12,200
	CKD		10	7	17	12	10	8	4,575
	Durapoz		10	7	17	12	10	8	-
INTERNAL TRANSFERS	High Limestone		4	30	42	36	12	8	217,854
	Low Limestone		4	30	42	36	12	8	217,854
	Gypsum		4	30	42	36	12	8	22,737
	Iron Ore		4	30	46	38	16	8	4,841
	Silica		4	30	42	36	12	8	43,571
	Quarry Rock		4	30	42	36	12	8	40,000
	Miscellaneous		4	30	33	32	3	8	
	Miscellaneous		4	30	31	31	1	8	
	Miscellaneous		4	30	31	30	1	8	
MISCELLANEOUS	Employees		4				0	8	
	Number of rain days per yea	90							

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED PAVED ROAD EMISSIONS SUMMARY

Segment No.	Segment Length (mi)	Paved Road Data Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Material Trips (#/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Total Emissions TSP (T/yr)	Total Emissions PM10 (T/yr)
3A	0.03	1750.00	12.50	0.35	24546	700	90	50.00	1.14	2.48	0.39	0.65	0.13
3B	0.05	1750.00	12.50	0.35	30267	1440	90	50.00	1.12	2.40	0.39	1.29	0.28
3C	0.03	1750.00	12.50	0.35	16930	483	90	50.00	1.12	2.22	0.39	0.33	0.09
3D	0.02	1750.00	12.50	0.35	16625	316	90	50.00	1.13	2.22	0.39	0.22	0.06
3E	0.02	1750.00	12.50	0.35	16320	388	90	50.00	1.14	2.22	0.39	0.27	0.07
3F	0.01	1750.00	12.50	0.35	16320	233	90	50.00	1.14	2.22	0.39	0.16	0.04
3FF	0.03	1750.00	12.50	0.35	24728	824	90	50.00	1.14	2.43	0.39	0.74	0.16
3I	0.01	1750.00	12.50	0.35	305	4	90	50.00	n/a	1.13	0.39	0.00	0.00
3J	0.06	1750.00	12.50	0.35	305	17	90	50.00	n/a	1.13	0.39	0.01	0.00
3K	0.03	1750.00	12.50	0.35	305	9	90	50.00	n/a	1.13	0.39	0.00	0.00
3L	0.08	1750.00	12.50	0.35	305	25	90	50.00	n/a	1.13	0.39	0.01	0.00
3N	0.02	1750.00	12.50	0.35	1972	38	90	50.00	n/a	2.51	0.39	0.05	0.01
3R	0.03	1750.00	12.50	0.35	2861	95	90	50.00	1.01	2.04	0.39	0.07	0.02
3M	0.05	1750.00	12.50	0.35	4846	231	90	50.00	1.11	2.43	0.39	0.20	0.04
				TOTAL	156635	4802						4.01	0.92
				TOTAL (LB/HR)								13.36	3.08

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED PAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3A	0.03	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36			36	22737	640	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.5	0.36	13	40	26		x	28	191	7	0.0	0.2	0.2	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12	x	x	10	3050	305	8.7	8.7	17.4	90	50	0.81	1.13	0.39	0.00	0.00	0.01	0.00	0.00	0.00
		Coal*	1750	12.5	0.36	18	53	36	x	x	36	70000	1872	11.2	86.2	97.4	90	50	1.18	2.61	0.39	0.01	0.07	0.08	0.00	0.01	0.01
		Oil	1750	12.5	0.36	11	25	18			14	9160	654	0.0	0.0	0.0	90	50	0.94	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.5	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36	x	x	36	382737	10781	307.3	307.3	614.6	90	50	1.18	2.61	0.39	0.18	0.38	0.56	0.06	0.06	0.12
		Durascem (Bulk)	1750	12.5	0.36	13	40	26	x	x	28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.5	0.36	7	17	12			10	4575	458	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.5	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			24848	327.2	372.4	699.6			1.14	2.46	0.39	0.19	0.46	0.65	0.06	0.07	0.13

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3B	0.06	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36	x	x	36	9682	273	13.0	13.0	26.0	90	50	1.18	2.61	0.39	0.01	0.02	0.02	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36	x	x	36	45474	1281	60.9	60.9	121.8	90	50	1.18	2.61	0.39	0.04	0.08	0.11	0.01	0.01	0.02
		Grinding Aid	1750	12.5	0.36	13	40	26		x	28	191	7	0.0	0.3	0.3	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12	x	x	10	3050	305	14.5	14.5	29.0	90	50	0.81	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.01
		Coal*	1750	12.5	0.36	18	53	36	x	x	36	70000	1872	18.8	93.8	112.6	90	50	1.18	2.61	0.39	0.01	0.12	0.13	0.00	0.02	0.02
		Oil	1750	12.5	0.36	11	25	18	x	x	14	18300	1307	62.2	62.2	124.4	90	50	0.94	1.49	0.39	0.03	0.05	0.07	0.01	0.01	0.02
		Silica	1750	12.5	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36	x	x	36	382737	10781	513.0	513.0	1026.0	90	50	1.18	2.61	0.39	0.30	0.64	0.94	0.10	0.10	0.20
		Durascem (Bulk)	1750	12.5	0.36	13	40	26	x	x	28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.5	0.36	7	17	12			10	4575	458	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.5	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			30287	682.6	757.8	1440.1			1.12	2.40	0.39	0.38	0.91	1.29	0.13	0.16	0.29

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3C	0.03	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36	x	x	36	4841	136	3.9	3.9	7.8	90	50	1.18	2.61	0.39	0.00	0.00	0.01	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36	x	x	36	22737	640	18.3	18.3	36.6	90	50	1.18	2.61	0.39	0.01	0.02	0.03	0.00	0.00	0.01
		Grinding Aid	1750	12.5	0.36	13	40	26		x	28	191	7	0.0	0.2	0.2	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12	x	x	10	3050	305	17.4	8.7	26.1	90	50	0.81	1.13	0.39	0.01	0.00	0.01	0.00	0.00	0.01
		Coal*	1750	12.5	0.36	18	53	36	x	x	36	70000	1872	11.2	86.2	97.4	90	50	1.18	2.61	0.39	0.01	0.07	0.08	0.00	0.01	0.01
		Oil	1750	12.5	0.36	11	25	18	x	x	14	9160	654	18.6	18.6	37.3	90	50	0.94	1.49	0.39	0.01	0.01	0.02	0.00	0.00	0.01
		Silica	1750	12.5	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36	x		36	382737	10781	307.3	0.0	307.3	90	50	1.18	2.61	0.39	0.18	0.00	0.18	0.06	0.00	0.06
		Durascem (Bulk)	1750	12.5	0.36	13	40	26	x		28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.5	0.36	7	17	12			10	4575	458	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.5	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			16830	370.7	136.9	482.5			1.12	2.22	0.39	0.21	0.12	0.33	0.07	0.02	0.08

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3D	0.02	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.69	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36	x	x	36	4841	136	2.6	2.6	5.2	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36	x	x	36	22737	640	12.2	12.2	24.4	90	50	1.18	2.61	0.39	0.01	0.02	0.02	0.00	0.00	0.00
		Grinding Aid	1750	12.5	0.36	13	40	26		x	28	191	7	0.0	0.1	0.1	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12	x	x	10	3050	305	5.8	5.8	11.6	90	50	0.81	1.13	0.39	0.00	0.00	0.01	0.00	0.00	0.00
		Coal*	1750	12.5	0.36	18	53	36	x	x	36	70000	1872	7.5	37.5	45.0	90	50	1.18	2.61	0.39	0.00	0.05	0.05	0.00	0.01	0.01
		Oil	1750	12.5	0.36	11	25	18	x	x	14	9160	654	12.4	12.4	24.8	90	50	0.94	1.49	0.39	0.01	0.01	0.01	0.00	0.00	0.00
		Silica	1750	12.5	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36	x		36	382737	10781	206.2	0.0	206.2	90	50	1.18	2.61	0.39	0.12	0.00	0.12	0.04	0.00	0.04
		Durascem (Bulk)	1750	12.5	0.36	13	40	26	x		28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.5	0.36	7	17	12			10	4575	458	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.5	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			16626	246.8	70.7	318.5			1.13	2.27	0.39	0.14	0.08	0.22	0.05	0.01	0.06

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED PAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3E	0.02	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36	x	x	35	4841	136	3.2	3.2	6.5	80	50	1.18	2.61	0.39	0.00	0.00	0.01	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36	x	x	35	22737	640	15.2	15.2	30.5	80	50	1.18	2.61	0.39	0.01	0.02	0.03	0.00	0.00	0.01
		Grinding Aid	1750	12.6	0.36	13	40	26		x	27	181	7	0.0	0.2	0.2	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		x	10	3060	306	0.0	7.3	7.3	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36		x	35	70000	1972	0.0	44.4	44.4	80	50	1.18	2.61	0.39	0.00	0.06	0.06	0.00	0.01	0.01
		Oil	1750	12.6	0.36	11	25	18	x	x	14	8180	584	13.1	13.1	26.3	80	50	0.84	1.49	0.39	0.01	0.01	0.02	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			35	43671	1227	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36	x		35	382737	10781	254.6	0.0	254.6	80	50	1.18	2.61	0.39	0.15	0.00	0.15	0.05	0.00	0.05
		Duracem (Bulk)	1750	12.6	0.36	13	40	26	x		27	0	0	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			27	12200	444	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4875	488	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			18320	289.9	88.4	380.3			1.14	2.22	0.39	0.17	0.10	0.27	0.06	0.02	0.07

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3F	0.01	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36	x	x	35	4841	136	1.8	1.9	3.8	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36	x	x	35	22737	640	9.1	9.1	18.3	80	50	1.18	2.61	0.39	0.01	0.01	0.02	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26		x	27	181	7	0.0	0.1	0.1	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		x	10	3060	306	0.0	4.4	4.4	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36		x	35	70000	1972	0.0	32.2	32.2	80	50	1.18	2.61	0.39	0.00	0.04	0.04	0.00	0.01	0.01
		Oil	1750	12.6	0.36	11	25	18	x	x	14	8180	584	5.3	5.3	10.7	80	50	0.84	1.49	0.39	0.00	0.01	0.01	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			35	43671	1227	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36	x		35	382737	10781	184.0	0.0	184.0	80	50	1.18	2.61	0.39	0.09	0.00	0.09	0.03	0.00	0.03
		Duracem (Bulk)	1750	12.6	0.36	13	40	26	x		27	0	0	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			27	12200	444	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4875	488	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12		x	10	0	0	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			18320	180.3	53.0	233.1			1.14	2.22	0.39	0.10	0.06	0.16	0.03	0.01	0.04

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3FF	0.03	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36	x	x	35	4841	136	4.5	4.5	9.1	80	50	1.18	2.61	0.39	0.00	0.01	0.01	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36	x	x	35	22737	640	21.3	21.3	42.7	80	50	1.18	2.61	0.39	0.01	0.03	0.04	0.00	0.00	0.01
		Grinding Aid	1750	12.6	0.36	13	40	26			27	181	7	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		x	10	3060	306	0.0	10.2	10.2	80	50	0.61	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36			35	70000	1972	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.6	0.36	11	25	18	x	x	14	8180	584	21.4	21.4	42.8	80	50	0.84	1.49	0.39	0.01	0.02	0.03	0.00	0.00	0.01
		Silica	1750	12.6	0.36	18	53	36			35	43671	1227	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36	x	x	35	382737	10781	359.2	359.2	718.4	80	50	1.18	2.61	0.39	0.21	0.46	0.68	0.07	0.07	0.14
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			27	0	0	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			27	12200	444	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4875	488	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			24728	406.9	417.5	823.8			1.14	2.43	0.39	0.22	0.51	0.74	0.08	0.08	0.16

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3I	0.01	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	80	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36			35	4841	136	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36			35	22737	640	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26			27	181	7	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		x	10	3060	306	0.0	4.4	4.4	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36			35	70000	1972	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.6	0.36	11	25	18			14	8180	584	0.0	0.0	0.0	80	50	0.84	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			35	43671	1227	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36			35	382737	10781	0.0	0.0	0.0	80	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			27	0	0	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			27	12200	444	0.0	0.0	0.0	80	50	0.91	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4875	488	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	80	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			306	0.0	4.4	4.4			n/a	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED PAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3J	0.04	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36			36	22737	640	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26			28	181	7	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		X	10	3050	305	0.0	17.4	17.4	90	50	0.61	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36			36	70000	1972	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.6	0.36	11	26	18			14	8160	584	0.0	0.0	0.0	90	50	0.84	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4876	488	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		305	0.0	17.4	17.4			n/a	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.00

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3K	0.03	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36			36	22737	640	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26			28	181	7	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		X	10	3050	305	0.0	8.7	8.7	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36			36	70000	1972	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.6	0.36	11	26	18			14	8160	584	0.0	0.0	0.0	90	50	0.84	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4876	488	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		305	0.0	8.7	8.7			n/a	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3L	0.06	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36			36	22737	640	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26			28	181	7	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12		X	10	3050	305	0.0	24.7	24.7	90	50	0.61	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36			36	70000	1972	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.6	0.36	11	26	18			14	8160	584	0.0	0.0	0.0	90	50	0.84	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4876	488	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		305	0.0	24.7	24.7			n/a	1.13	0.39	0.00	0.01	0.01	0.00	0.00	0.00

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3M	0.02	High Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.6	0.36	30	42	36			12	217864	18155	0.0	0.0	0.0	90	50	1.89	2.14	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.6	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.6	0.36	18	53	36			36	22737	640	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.6	0.36	13	40	26			28	181	7	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.6	0.36	7	17	12			10	3050	305	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.6	0.36	18	53	36		X	36	70000	1972	0.0	37.6	37.6	90	50	1.18	2.61	0.39	0.00	0.06	0.06	0.00	0.01	0.01
		Oil	1750	12.6	0.36	11	26	18			14	8160	584	0.0	0.0	0.0	90	50	0.84	1.49	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.6	0.36	18	53	36			36	43671	1227	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.6	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.18	2.61	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	1750	12.6	0.36	13	40	26			28	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.6	0.36	13	40	26			28	12200	444	0.0	0.0	0.0	90	50	0.81	2.07	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.6	0.36	7	17	12			10	4876	488	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Durapoz	1750	12.6	0.36	7	17	12			10	0	0	0.0	0.0	0.0	90	50	0.61	1.13	0.39	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		1972	0.0	37.6	37.6			n/a	2.61	0.39	0.00	0.06	0.06	0.00	0.01	0.01

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED PAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3R	0.03	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.89	2.14	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.89	2.14	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36	x	x	36	4841	136	4.5	4.5	9.1	90	50	1.16	2.81	0.38	0.00	0.01	0.01	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36	x	x	36	22737	645	21.3	21.3	42.7	90	50	1.16	2.81	0.38	0.01	0.03	0.04	0.00	0.00	0.01
		Grinding Aid	1750	12.5	0.36	13	40	26			28	181	7	0.0	0.0	0.0	90	50	0.81	2.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12			10	3660	306	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.5	0.36	18	53	36			36	70000	1872	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	1750	12.5	0.36	11	25	18	x	x	14	8160	654	21.8	21.8	43.6	90	50	0.84	1.49	0.38	0.01	0.02	0.03	0.00	0.00	0.01
		Silica	1750	12.5	0.36	18	53	36			36	43471	1227	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	1750	12.5	0.36	13	40	26			36	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26			28	17280	444	0.0	0.0	0.0	90	50	0.81	2.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	1750	12.5	0.36	7	17	12			10	4676	468	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Dumpez	1750	12.5	0.36	7	17	12			10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			2881	47.8	47.8	96.3			1.61	2.54	0.38	0.02	0.05	0.07	0.01	0.01	0.02

Segment No.	Segment Length (mi)	Material	Paved Road Data: Surface dust (lb/mi)	Silt %	Silt Loading (oz/yd2)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Sweepin & Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Emissions Paved lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3M	0.06	High Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.89	2.14	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	1750	12.5	0.36	30	42	36			12	217864	18156	0.0	0.0	0.0	90	50	1.89	2.14	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	1750	12.5	0.36	18	53	36			36	4841	136	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	1750	12.5	0.36	18	53	36			36	22737	642	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	1750	12.5	0.36	13	40	26	x	x	28	181	7	0.3	0.3	0.7	90	50	0.81	2.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	1750	12.5	0.36	7	17	12			10	3660	306	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	1750	12.5	0.36	18	53	36	x	x	36	70000	1872	93.8	93.8	187.6	90	50	1.16	2.81	0.38	0.05	0.12	0.17	0.02	0.02	0.04
		Oil	1750	12.5	0.36	11	25	18			14	8160	654	0.0	0.0	0.0	90	50	0.84	1.49	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	1750	12.5	0.36	18	53	36			36	43471	1227	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	1750	12.5	0.36	18	53	36			36	382737	10781	0.0	0.0	0.0	90	50	1.16	2.81	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	1750	12.5	0.36	13	40	26			36	0	0	0.0	0.0	0.0	90	50	0.81	2.07	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	1750	12.5	0.36	13	40	26	x	x	28	17280	444	21.1	21.1	42.3	90	50	0.81	2.07	0.38	0.01	0.02	0.03	0.00	0.00	0.01
		CKD	1750	12.5	0.36	7	17	12			10	4676	468	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Dumpez	1750	12.5	0.36	7	17	12	x	x	10	0	0	0.0	0.0	0.0	90	50	0.81	1.13	0.38	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			4846	116.3	116.3	230.6			1.11	2.43	0.38	0.06	0.14	0.20	0.02	0.02	0.04

11/24/97, 11:27 AM, DEQPROP1.XLS.xls, Unpvd. Rd. Smry.

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
		[illegible]	[illegible]	7.1	8	10	63	36			36	70000	1972	0.0	0.0	0	90	75	[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	25	18			14	9160	654	0.0	0.0	0	90	75	0.59	1.02	0.21	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	25	7.1	8	10	63	36	X	X	36	43671	1227	122.7	122.7	245	90	75	1.66	2.89	0.60	1.04	0.10	0.18	0.28	0.04	0.06	0.10
		Cement (Bulk)	25	7.1	8	10	63	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	18	7.1	8	12	40	26			28	0	0	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	12	40	26			28	12200	444	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4876	488	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dumpex	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			3486	122.7	122.7	245.4			1.66	2.89	0.60	1.04	0.10	0.18	0.28	0.04	0.06	0.10

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
O	0.10	High Limestone	4	7.1	8	30	42	36			12	217864	18166	0.0	0.0	0	90	75	0.62	0.62	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217864	18166	0.0	0.0	0	90	75	0.62	0.62	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	25	7.1	8	10	63	36	X	X	36	4841	136	13.5	13.5	27	90	75	1.66	2.89	0.60	1.04	0.01	0.02	0.03	0.00	0.01	0.01
		Gypsum	25	7.1	8	10	63	36	X	X	36	22737	640	64.0	64.0	128	90	75	1.66	2.89	0.60	1.04	0.05	0.09	0.15	0.02	0.03	0.05
		Grinding Aid	18	7.1	8	12	40	26			28	181	7	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	2000	200	0.0	0.0	0	90	75	[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	25	7.1	8	10	63	36			36	70000	1972	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	25	18			14	9160	654	0.0	0.0	0	90	75	0.59	1.02	0.21	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	25	7.1	8	10	63	36			36	43671	1227	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	25	7.1	8	10	63	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	18	7.1	8	12	40	26			28	0	0	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	12	40	26	X	X	28	12200	444	44.4	44.4	89	90	75	1.20	1.94	0.39	0.70	0.03	0.04	0.07	0.01	0.02	0.02
		CKD	18	7.1	8	7	17	12	X	X	10	4876	488	48.8	48.8	98	90	75	0.54	0.84	0.19	0.30	0.01	0.02	0.03	0.00	0.01	0.01
		Dumpex	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			3306	167.8	167.8	335.5			1.28	2.00	0.43	0.76	0.10	0.17	0.26	0.04	0.06	0.10

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
N*	0.20	High Limestone	4	7.1	8	30	42	36			12	217864	18166	0.0	0.0	0	90	75	[illegible]	[illegible]	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217864	18166	0.0	0.0	0	90	75	[illegible]	[illegible]	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	25	7.1	8	10	63	36			36	4841	136	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	25	7.1	8	10	63	36			36	22737	640	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	12	40	26			28	181	7	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	2000	200	0.0	0.0	0	90	75	[illegible]	[illegible]	[illegible]	[illegible]	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	25	7.1	8	10	63	36		X	36	70000	1972	0.0	394.4	394	90	75	1.66	2.89	0.60	1.04	0.00	0.57	0.57	0.00	0.21	0.21
		Oil	10	7.1	8	11	25	18			14	9160	654	0.0	0.0	0	90	75	0.59	1.02	0.21	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	25	7.1	8	10	63	36			36	43671	1227	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	25	7.1	8	10	63	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Duracem (Bulk)	18	7.1	8	12	40	26			28	0	0	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	12	40	26			28	12200	444	0.0	0.0	0	90	75	1.20	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12	X	X	10	4876	488	91.5	91.5	183	90	75	0.54	0.84	0.19	0.30	0.02	0.04	0.06	0.01	0.01	0.02
		Dumpex	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			2987	91.5	485.9	577.4			0.54	2.51	0.19	0.90	0.02	0.61	0.63	0.01	0.22	0.23

ASH GROVE CEMENT COMPANY, [illegible] PLANT; PROPOSED UNPAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	SL %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3P1	0.10	High Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	4641	129	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	632	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	41	27			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.58	1.06	0.21	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36		X	36	70988	1972	0.0	197.2	197	90	75	1.66	2.89	0.60	1.04	0.00	0.29	0.29	0.00	0.10	0.10
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.62	0.34	0.58	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43671	1213	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	387737	10771	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	49	31			36	0	0	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	49	31			36	15988	444	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4971	497	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dunnage	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			1972	0.0	197.2	197.2			n/a	2.89	n/a	1.04	0.00	0.29	0.29	0.00	0.10	0.10

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	SL %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3Q	0.10	High Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	4641	129	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	632	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	41	27			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.58	1.06	0.21	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36	X		36	70988	1972	197.2	0.0	197	90	75	1.66	2.89	0.60	1.04	0.16	0.00	0.16	0.06	0.00	0.06
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.62	0.34	0.58	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43671	1213	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	387737	10771	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	49	31			36	0	0	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	49	31			36	15988	444	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4971	497	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dunnage	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			1972	197.2	0.0	197.2			1.66	n/a	0.60	n/a	0.16	0.00	0.16	0.06	0.00	0.06

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	SL %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
3Q	0.07	High Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	4641	129	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	632	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	41	27			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.58	1.06	0.21	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36		X	36	70988	1972	0.0	131.3	131	90	75	1.66	2.89	0.60	1.04	0.00	0.19	0.19	0.00	0.07	0.07
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.62	0.34	0.58	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43671	1213	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	387737	10771	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	49	31			36	0	0	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	49	31			36	15988	444	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4971	497	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dunnage	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			1972	0.0	131.3	131.3			n/a	2.89	n/a	1.04	0.00	0.19	0.19	0.00	0.07	0.07

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	SL %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
HR1	0.10	High Limestone	4	7.1	8	30	42	36	X	X	12	217964	18164	1816.4	1816.4	3633	90	75	0.58	0.69	0.21	0.25	0.53	0.63	1.16	0.19	0.23	0.42
		Low Limestone	4	7.1	8	30	42	36			12	217964	18164	0.0	0.0	0	90	75	0.58	0.69	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	4641	129	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	632	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	41	27			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.58	1.06	0.21	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70988	1972	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.62	0.34	0.58	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43671	1213	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	387737	10771	0.0	0.0	0	90	75	1.66	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	49	31			36	0	0	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	49	31			36	15988	444	0.0	0.0	0	90	75	1.40	1.94	0.39	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4971	497	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dunnage	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.84	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			36328	1816.4	1816.4	3632.8			0.58	0.69	0.21	0.25	0.53	0.63	1.16	0.19	0.23	0.42

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED UNPAVED ROAD EMISSIONS

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
LR1	0.20	High Limestone	4	7.1	8	30	42	36	X	X	12	217994	18166	3630.9	3630.9	7262	90	75	0.69	0.92	0.21	0.25	1.07	1.26	2.33	0.38	0.45	0.84
		Low Limestone	4	7.1	8	30	42	36	X	X	12	217994	18166	3630.9	3630.9	7262	90	75	0.69	0.92	0.21	0.25	1.07	1.26	2.33	0.38	0.45	0.84
		Iron Ore	26	7.1	8	18	53	36			36	4861	136	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	640	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	40	26			26	181	7	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.69	1.06	0.25	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70000	1972	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	26	18			14	9190	664	0.0	0.0	0	90	75	0.90	1.02	0.31	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43871	1227	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Mortar (Bulk)	18	7.1	8	13	40	26			26	0	0	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			26	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	10	7.1	8	7	17	12			10	4875	488	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
		Dunpes	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.94	0.19	0.30	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			[illegible]	7261.8	7261.8	14523.6			0.69	0.92	0.21	0.25	2.13	2.52	4.65	0.77	0.91	1.68

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
CKD	0.10	High Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	4861	136	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	22737	640	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	13	40	26			26	181	7	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.69	1.06	0.25	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70000	1972	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	26	18			14	9190	664	0.0	0.0	0	90	75	0.90	1.02	0.31	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43871	1227	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	40	26			26	0	0	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			26	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	10	7.1	8	7	17	12	X	X	10	4875	488	48.8	48.8	98	90	75	0.54	0.94	0.19	0.36	0.01	0.02	0.03	0.00	0.01	0.01
		Dunpes	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			[illegible]	48.8	48.8	97.6			0.54	0.94	0.19	0.36	0.01	0.02	0.03	0.00	0.01	0.01

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
G1	0.10	High Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36	X	X	36	1876	75	7.5	7.5	15	90	75	1.66	2.88	0.58	1.04	0.01	0.01	0.02	0.00	0.00	0.01
		Gypsum	26	7.1	8	18	53	36	X	X	36	7267	291	29.1	29.1	58	90	75	1.66	2.88	0.58	1.04	0.02	0.04	0.07	0.01	0.02	0.02
		Grinding Aid	18	7.1	8	13	40	26			26	181	7	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.69	1.06	0.25	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70000	1972	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	26	18			14	9190	664	0.0	0.0	0	90	75	0.90	1.02	0.31	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43871	1227	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	40	26			26	0	0	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			26	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	10	7.1	8	7	17	12			10	4875	488	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
		Dunpes	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			731	36.6	36.6	73.1			1.66	2.88	0.58	1.04	0.03	0.05	0.08	0.01	0.02	0.03

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
U2	0.10	High Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217994	18166	0.0	0.0	0	90	75	0.69	0.92	0.21	0.25	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	1876	75	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36	X	X	36	7267	291	29.1	29.1	58	90	75	1.66	2.88	0.58	1.04	0.02	0.04	0.07	0.01	0.02	0.02
		Grinding Aid	18	7.1	8	13	40	26			26	181	7	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3060	306	0.0	0.0	0	90	75	0.69	1.06	0.25	0.38	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70000	1972	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	10	7.1	8	11	26	18			14	9190	664	0.0	0.0	0	90	75	0.90	1.02	0.31	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43871	1227	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.66	2.88	0.58	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum (Bulk)	18	7.1	8	13	40	26			26	0	0	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			26	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.38	0.70	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	10	7.1	8	7	17	12			10	4875	488	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
		Dunpes	10	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.54	0.94	0.19	0.36	0.00	0.00	0.00	0.00	0.00	0.00
										SUBTOTAL			581	29.1	29.1	58.1			1.66	2.88	0.58	1.04	0.02	0.04	0.07	0.01	0.02	0.02

Segment No	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
15	0.07	High Limestone	4	7.1	8	30	42	36			12	217864	18156	0.0	0.0	0	90	75	0.89	0.89	0.21	0.28	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217864	18155	0.0	0.0	0	90	75	0.89	0.89	0.21	0.28	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36	X	X	36	1878	78	5.3	5.3	11	90	75	1.56	2.89	0.60	1.04	0.00	0.01	0.01	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	7267	281	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	12	40	26			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3650	365	0.0	0.0	0	90	75	0.66	1.06	0.25	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70999	1972	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.52	0.24	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36			36	43671	1227	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		[illegible] (Bulk)	18	7.1	8	13	40	26			28	0	0	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			28	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4875	488	0.0	0.0	0	90	75	0.84	0.84	0.13	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dumpster	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.84	0.84	0.13	0.30	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		190	5.3	5.3	10.5			1.56	2.89	0.60	1.04	0.00	0.01	0.01	0.00	0.00	0.00

Segment No.	Segment Length (mi)	Material	Unpaved Road Data: Number of Wheels	Silt %	Vehicle Speed (mph)	Truck Weights: Empty (Tons)	Loaded (Tons)	Avg (Tons)	Truck Trips: Empty	Loaded	Material Net (Tons)	Material (T/yr)	Material Trips (#/yr)	Empty Mileage (Mi/yr)	Loaded Mileage (Mi/yr)	Total Mileage (Mi/yr)	Rain Days (year)	Water Control %	TSP Empty Trucks lb/VMT	TSP Loaded Trucks lb/VMT	PM-10 Empty Trucks lb/VMT	PM-10 Loaded Trucks lb/VMT	Empty Truck TSP Emissions (T/yr)	Loaded Truck TSP Emissions (T/yr)	Total Emissions TSP (T/yr)	Empty Truck PM10 Emissions (T/yr)	Loaded Truck PM10 Emissions (T/yr)	Total Emissions PM10 (T/yr)
61	0.06	High Limestone	4	7.1	8	30	42	36			12	217864	18156	0.0	0.0	0	90	75	0.89	0.89	0.21	0.28	0.00	0.00	0.00	0.00	0.00	0.00
		Low Limestone	4	7.1	8	30	42	36			12	217864	18155	0.0	0.0	0	90	75	0.89	0.89	0.21	0.28	0.00	0.00	0.00	0.00	0.00	0.00
		Iron Ore	26	7.1	8	18	53	36			36	1878	78	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Gypsum	26	7.1	8	18	53	36			36	7267	281	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Grinding Aid	18	7.1	8	12	40	26			28	191	7	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		Tires	14	7.1	8	7	17	12			10	3650	365	0.0	0.0	0	90	75	0.66	1.06	0.25	0.39	0.00	0.00	0.00	0.00	0.00	0.00
		Coal	26	7.1	8	18	53	36			36	70999	1972	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		Oil	18	7.1	8	11	25	18			14	9156	654	0.0	0.0	0	90	75	0.98	1.52	0.24	0.37	0.00	0.00	0.00	0.00	0.00	0.00
		Silica	26	7.1	8	18	53	36	X	X	36	12944	661	28.6	28.6	57	90	75	1.56	2.89	0.60	1.04	0.03	0.04	0.07	0.01	0.01	0.02
		Cement (Bulk)	26	7.1	8	18	53	36			36	382737	10781	0.0	0.0	0	90	75	1.56	2.89	0.60	1.04	0.00	0.00	0.00	0.00	0.00	0.00
		[illegible] (Bulk)	18	7.1	8	13	40	26			28	0	0	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		Potash	18	7.1	8	13	40	26			28	12200	444	0.0	0.0	0	90	75	1.09	1.94	0.39	0.78	0.00	0.00	0.00	0.00	0.00	0.00
		CKD	18	7.1	8	7	17	12			10	4875	488	0.0	0.0	0	90	75	0.84	0.84	0.13	0.30	0.00	0.00	0.00	0.00	0.00	0.00
		Dumpster	18	7.1	8	7	17	12			10	0	0	0.0	0.0	0	90	75	0.84	0.84	0.13	0.30	0.00	0.00	0.00	0.00	0.00	0.00
											SUBTOTAL		1086	28.6	28.6	57.1			1.56	2.89	0.60	1.04	0.02	0.04	0.07	0.01	0.01	0.02

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED EMISSIONS FROM STORAGE PILES

Area	Pile Num	Pile Material	Pile Storage (Tons)	Pile Area (Acres)	Material Moisture (%)	Material Throughput (T/yr)	AVG Wind Speed (mph)	Rain Days (days/yr)	TSP Transfer Factor (lb/Ton)	TSP Wind Factor (lb per acre/day)	TSP Transfer Emissions (T/yr)	TSP Wind Emissions (T/yr)	PM_{10} Transfer Factor (lb/Ton)	PM_{10} Wind Factor (lb per acre/day)	PM_{10} Transfer Emissions (T/yr)	PM_{10} Wind Emissions (T/yr)	TSP Total Emissions (T/yr)	PM_{10} Total Emissions (T/yr)
Quarry	1	Limestone (High)	50000	2.00	8	217854	10.2	90	0.00116	3.5	0.1265	0.96	0.00041	1.7	0.04	0.4675	1.09	0.51
Quarry	2	Limestone (Low)	50000	2.00	8	217854	10.2	90	0.00116	3.5	0.1265	0.96	0.00041	1.7	0.04	0.4675	1.09	0.51
Quarry	3	Gypsum	3370	0.50	8	22737	10.2	90	0.00116	3.5	0.0132	0.24	0.00041	1.7	0.00	0.1169	0.25	0.12
Quarry	4	Iron Ore	989	0.40	2	4841	10.2	90	0.00808	3.5	0.0198	0.19	0.00283	1.7	0.01	0.0935	0.21	0.10
Plant	5	Coal	8965	1.00	5	70000	10.2	90	0.00224	3.5	0.0785	0.48	0.00078	1.7	0.03	0.2338	0.56	0.26
Quarry	6	Silica	26095	1.00	10	43571	10.2	90	0.00085	3.5	0.0185	0.48	0.00030	1.7	0.01	0.2338	0.50	0.24
Quarry	7	CKD	10000	1.00	1	4575	10.2	90	0.02134	3.5	0.0488	0.48	0.00747	1.7	0.02	0.2338	0.53	0.25
																TOTAL	**4.23**	**2.00**

REFERENCES:

AP-42 SECTION 11.2.3 (PILE TRANSFERS)
AP-42 SECTION 8.19.1 (PILE WIND EROSION)
ASSUMED NO WIND EROSION ON RAIN DAYS

ASH GROVE CEMENT COMPANY, INKOM PLANT; PROPOSED EMISSIONS FROM INTERNAL TRANSFERS

Segment No.	Segment Length (mi)	CAT No.	Material	Silt %	Number of Wheels	TRUCK WEIGHT Empty (Tons)	TRUCK WEIGHT Loaded (Tons)	TRUCK WEIGHT Avg (Tons)	Material Net (Tons)	Avg Speed (mph)	Material (T/yr)	Material Trips (#/yr)	Trip Mileage (Mi/yr)	Bucket Weight (T/Bucket)	Bucket Size (yd3)	Bulk Density (lb/ft3)	Bucket Factor	Rain Days (year)	Unpaved Water Control %	TSP Emissions Unpaved (lb/VMT)	PM-10 Emissions Unpaved (lb/VMT)	Total Emissions TSP (T/yr)	Total Emissions PM-10 (T/yr)
103	0.02	980B1	Gypsum	15	4	30	42	36	12	8	22738.64	7267	291	3.13	3	103	0.75	90	20	4.36	1.57	0.83	0.23
104	0.02	980B1	Iron Ore	15	4	30	46	38	16	8	4841.2	1878	75	2.88	3	80	0.75	90	20	4.47	1.61	0.17	0.06
106	0.02	980B1	Silica	7.1	4	30	42	36	12	8	43570.8	12564	503	3.47	5	68.5	0.75	90	20	2.06	0.74	0.52	0.19
107	0.02	D10/D9L	Quarry Rock	7.1	4	30	42	36	12	8	40000	6271	251	6.38	5	126	0.75	90	20	2.06	0.74	0.26	0.09
108	0.02	950F	Miscellaneous	15	4	10	14	12	4	8	5000	1254	50	6.38	5	126	0.75	90	20	2.51	0.90	0.06	0.02
109	0.02	920	Miscellaneous	15	4	10	14	12	4	8	5000	784	31	6.38	5	126	0.75	90	20	2.51	0.90	0.04	0.01
110	0.02	Bobcat	Miscellaneous	15	4	2	2.5	2	1	8	1000	157	6	6.38	5	126	0.75	90	20	1.09	0.39	0.00	0.00
													1207								TOTAL	1.88	0.61
													150.8619								TOTAL (LB/HR)	41.7868187	

APPENDIX B

ASH GROVE CEMENT COMPANY

WESTERN REGION
230 CEMENT ROAD
INKOM, IDAHO 83245-1543
PHONE 208 / 775-3351
FAX 208 / 775-3509

RECEIVED
OCT 06 1997
DIV. OF ENVIRONMENTAL QUALITY
AIR & HAZARDOUS WASTE

October 3, 1997

BY FEDERAL EXPRESS

Orville D. Green
Assistant Administrator
Air & Hazardous Waste
Idaho Department of Health and Welfare
Division of Environmental Quality
1410 North Hilton
Boise, ID 83706-1255

Re: Modification of Tier II Permit 005-00004

Dear Mr. Green:

Thank you for your letter of September 10, 1997 in which you requested further information about emission factors used in the emissions estimate included in Ash Grove's August 15 application.

The emissions estimate is based upon one developed by Environmental Quality Management, Inc. (EQM) under contract with Idaho Department of Environmental Quality (IDEQ) during 1993-1995. Ash Grove updated this emissions estimate to reflect information that has become available since EQM developed the original estimate.

1) The PM/PM_{10} ratio was changed from a range of values used by EQM to 48 percent for all areas where crushed stone processing factors were deemed appropriate. EQM referenced AP-42 for these factors and actually used them to derive the PM_{10} factor from the PM factor which was an absolute value taken from AP-42 tables. AP-42 has been updated since EQM prepared the emissions estimate. Table 11.19.2.2 of AP-42 published January 1995 contains mainly PM_{10} factors. PM factors can be derived from the PM_{10} factors in accordance with footnote "c" to the table. This footnote indicates that PM factors can be derived from the PM_{10} factors by multiplying by 2.1. In other words, the PM/PM_{10} ratio is 2.1 from which it can be deduced that the PM_{10}/PM ratio is 1 divided by 2.1 = 48 percent. Ash Grove is in the habit of using this ratio because this has been accepted by other state agencies. To derive the PM factor from the PM_{10} factor Ash Grove chose to divide the PM_{10} factor by 48 percent rather than multiply it by 2.1 because the EQM spreadsheet invited this approach.

2) Ash Grove changed the coal handling factors from those used by EQM because EQM's emission factor reference was considered inferior to AP-42. Ash Grove is in the habit of using crushed stone processing factors for coal because this has been

accepted by other state agencies. It could be argued that factors for Western Surface Coal Mining in chapter 11.9 of AP-42 should be used. This chapter, however, does not cover conveying and handling such as done in a cement plant. This is why the factors from this chapter were not used.

3) Ash Grove has not intended to use emission factors normally associated with stone processing to determine emission from process areas that handle clinker. Conversations with EQM convinced Ash Grove that EQM's factors for clinker processing areas were more representative than any from AP-42. EQM's work with hi-vol samplers from which the clinker processing factors were derived is explained in detail in the attached letter from EQM. EQM's factors are higher than the corresponding crushed stone processing factors from AP-42.

In addition to the responses above to the request for information contained in your letter, Ash Grove would like to take this opportunity to also respond to issues raised by Mr. Almer Casille during a phone conversation with Barbara Beagles and Hans Steuch of Ash Grove on Tuesday, September 30. Mr. Casille mentioned that in order for the application to be approved it cannot show an increase in emissions from unpaved roads and transfers above the values upon which the 12/04/95 Tier II permit is based.

Ash Grove has reviewed the emissions estimate (MS-excel workbook "prop-ei-rev3") for unpaved roads and transfers and has the following observations:

- The speeds used in the estimate for all vehicles on paved and unpaved roads (entered into the sheet "Road Inputs") were 15 miles per hour. The actual posted speed limit in the plant is 8 miles per. The values in the estimate have been updated to reflect the posted speed limits in the plant.

- Ash Grove takes two actions to control particulate emission from unpaved areas subjected to vehicle traffic. Magnesium chloride is applied at least once year and water is applied from a watering truck when conditions warrant. Appendix B to AP-42, in Table B.2-3, contains separate line items, AIRS Code 061 and 062, for each of these activities. The control factor ranges from 40 to 90 percent depending upon the particle size of the road dust. Ash Grove interprets the table to allow some accumulation of the effects of the two methods of dust control employed by the company and hence has increased the control percentage from 70 to 75 percent.

- Silica is now brought into the plant by the same company that brings in iron ore and gypsum. All three materials are brought to the plant in the same kind of vehicle. The vehicle information in sheet "Road Inputs" has been updated to reflect this fact.

- EQM was consulted about the meaning of "transfers". This covers Ash Grove's short hauls from the areas near storage piles where suppliers dump imported materials to the piles.

    - The distance for this haul has been conservatively set in past estimates to 0.05

miles, where in reality it is no more than 35 yards. As a consequence Ash Grove has updated the haul distance in the "Transfer" sheet to 0.02 miles.

- Silica and quarry rock are abrasion resistant and the size received is pebble to inch size. The silica and quarry rock transfer areas are covered in this coarse material. Therefore the silt content for these areas has been conservatively updated to the value used for unpaved roads. This value is 7.1 percent and has not changed since EQM's original estimate.
- On dry days when transfer activities could be dusty the transfer areas are watered with the watering truck. To reflect this practice a 20 % control for watering has been applied to the estimate.

- The revised workbook, named prop-ei-rev4, shows that updating the emissions estimate as described above results in emissions from unpaved roads and transfers being no higher than the values upon which the 12/04/95 Tier II permit is based. The workbook is attached in hardcopy and floppy disk format.

Ash Grove hopes the information provided in this letter is satisfactory. The changes made to the plant site emission from the choices discussed above are small, in the order of a few percent of total plant site emissions.

If you have any questions please do not hesitate to call me or Barbara Beagles at (208) 775-3351 or Hans E. Steuch at (503) 293-2333.

All information in this notification is true, accurate and complete based on information and belief formed after reasonable inquiry, in accordance with IDAPA 16.01.01.123 (Rules of the control of Air Pollution in Idaho).

Sincerely,

Don Killebrew

Don Killebrew
Plant Manager

Attachment: EQM letter
Emissions Estimate (hardcopy and floppy disk)

Copy: Barbara Beagles
Hans E. Steuch

970929b.doc

APPENDIX C

Table 11.19.2-2 (cont.).

[d] Emission factors for total particulate are not presented pending a re-evaluation of the EPA Method 201a test data and/or results of emission testing. This re-evaluation is expected to be completed by July 1995.
[e] References 9, 11, 15-16.
[f] Reference 1.
[g] No data available, but emission factors for PM-10 emission factors for tertiary crushing can be used as an upper limit for primary or secondary crushing.
[h] References 10-11, 15-16.
[j] Reference 12.
[k] References 13-14.
[m] Reference 3.
[n] Reference 4.

Emission factor estimates for stone quarry blasting operations are not presented here because of the sparsity and unreliability of available test data. While a procedure for estimating blasting emissions is presented in Section 11.9, Western Surface Coal Mining, that procedure should not be applied to stone quarries because of dissimilarities in blasting techniques, material blasted, and size of blast areas. Milling of fines is not included in this section as this operation is normally associated with nonconstruction aggregate end uses and will be covered elsewhere when information is adequate. Emission factors for fugitive dust sources, including paved and unpaved roads, materials handling and transfer, and wind erosion of storage piles, can be determined using the predictive emission factor equations presented in AP-42 Section 13.2.

References For Section 11.19.2

1. *Air Pollution Control Techniques for Nonmetallic Minerals Industry*, EPA-450/3-82-014, U. S. Environmental Protection Agency, Research Triangle Park, NC, August 1982.

2. Written communication from J. Richards, Air Control Techniques, P.C., to B. Shrager, MRI. March 18, 1994.

3. P. K. Chalekode *et al.*, *Emissions from the Crushed Granite Industry: State of the Art*, EPA-600/2-78-021, U. S. Environmental Protection Agency, Washington, DC, February 1978.

4. T. R. Blackwood *et al.*, *Source Assessment: Crushed Stone*, EPA-600/2-78-004L, U. S. Environmental Protection Agency, Washington, DC, May 1978.

5. F. Record and W. T. Harnett, *Particulate Emission Factors for the Construction Aggregate Industry, Draft Report*, GCA-TR-CH-83-02, EPA Contract No. 68-02-3510, GCA Corporation, Chapel Hill, NC, February 1983.

6. *Review Emission Data Base and Develop Emission Factors for the Construction Aggregate Industry*, Engineering-Science, Inc., Arcadia, CA, September 1984.

7. C. Cowherd, Jr. *et al.*, *Development of Emission Factors for Fugitive Dust Sources*, EPA-450/3-74-037, U. S. Environmental Protection Agency, Research Triangle Park, NC, June 1974.

December 8, 1997

MEMORANDUM

TO: Dave Sande, Accountant Supervisor
Support Services

FROM: Susan J. Richards, Chief
Air Quality Permitting Bureau
Air & Hazardous Waste

THROUGH: Almer B. Casile, Air Quality Engineer
Air Quality Permitting Bureau
Operating Permits Section

SUBJECT: Permit Application Fees for Tier II Operating Permit

The following facility has been reviewed for compliance with IDAPA 16.01.01.016 Rules for the Control of Air Pollution in Idaho.

Ash Grove Cement Company

Ash Grove Cement Company applied for a Tier II Operating Permit for their facility. DEQ has released the facility's Tier II Operating Permit. Because this facility has been found to meet this criteria and in accordance with IDAPA 16.01.01.470, the facility is subject to a permit application fee of:

Five Hundred Dollars and No Cents ($500.00)

The contact and mailing address for the above facility is:

PERSON CONTACT: Don Killebrew
COMPANY ADDRESS: Ash Grove Cement Company
230 Cement Road
Inkom, Idaho 83245-1543

DS\SJR\ABC::jrj-c\..agc-f.FEE

cc: M. Lowe, Pocatello Regional Office
Source File
COF